PULP & PAPER

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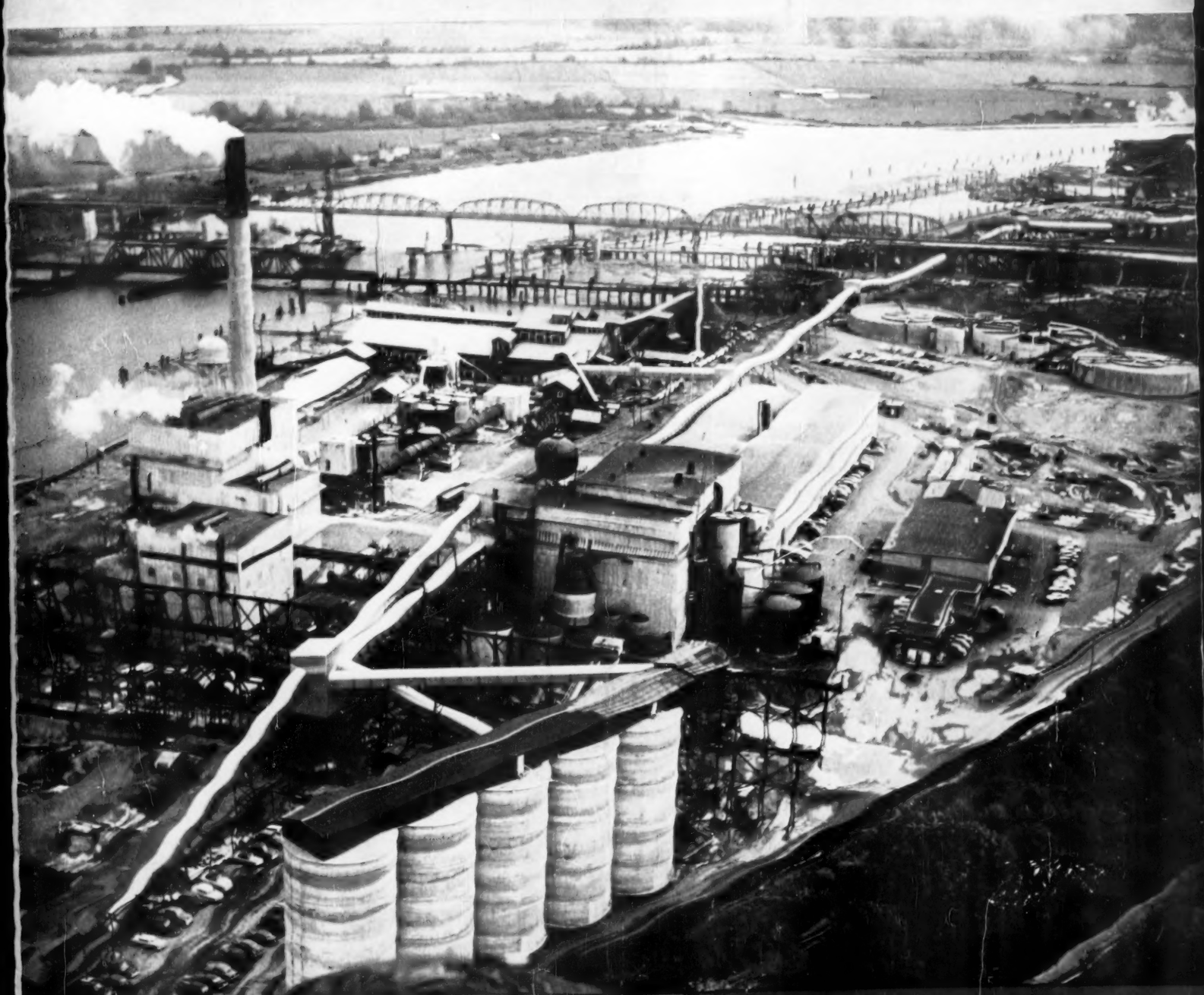
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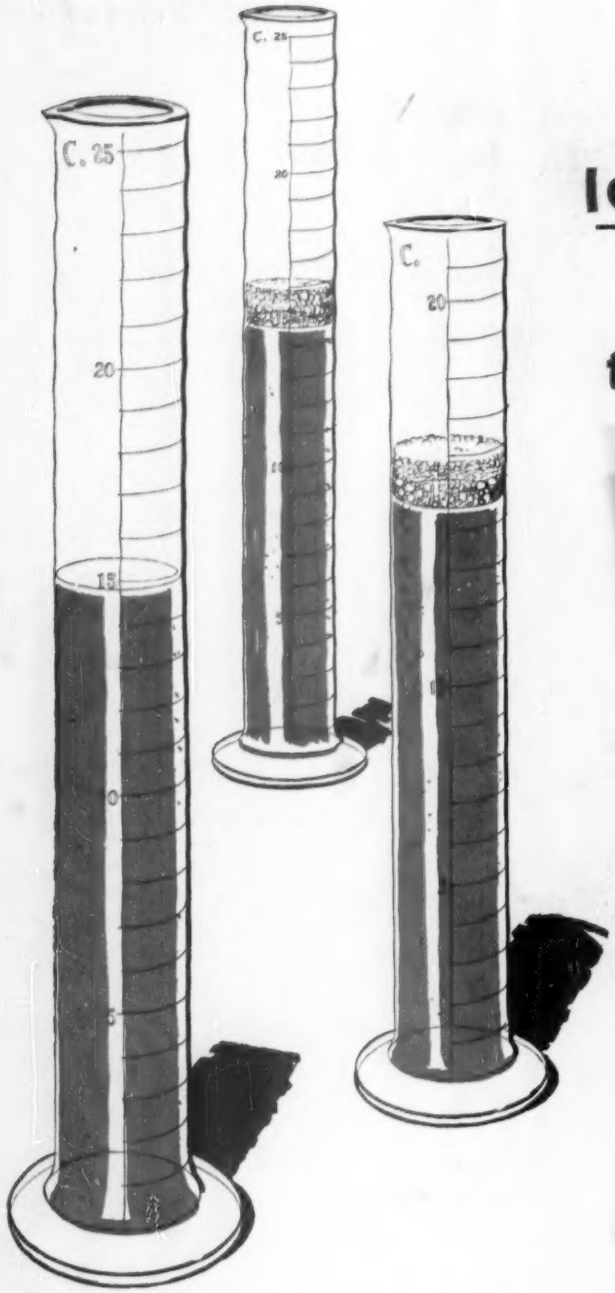
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THE PRODUCTION AND MANAGEMENT JOURNAL OF THE PULP AND PAPER INDUSTRY



Air view of new Weyerhaeuser Kraft Mill at Everett, Wash., showing "grouping" layout which makes for easier operation.

VOLUME 28
NUMBER 1
JANUARY 1954



you get

low foaming

in

three sizes

CYFOR Fortified Rosin Size – in many mills low foaming CYFOR has produced higher sizing results at lower cost . . . reducing size consumption as much as 50% over standard sizes.

ACCOBRITE Rosin Size – preferred under some production conditions for sizing efficiency; gives high whiteness, little drop-off in brightness on aging with no foaming problems.

FF Nonfoaming Dark Rosin Size – ideal for kraft and paperboard furnishes where whiteness is not as important as economy and freedom from foaming.

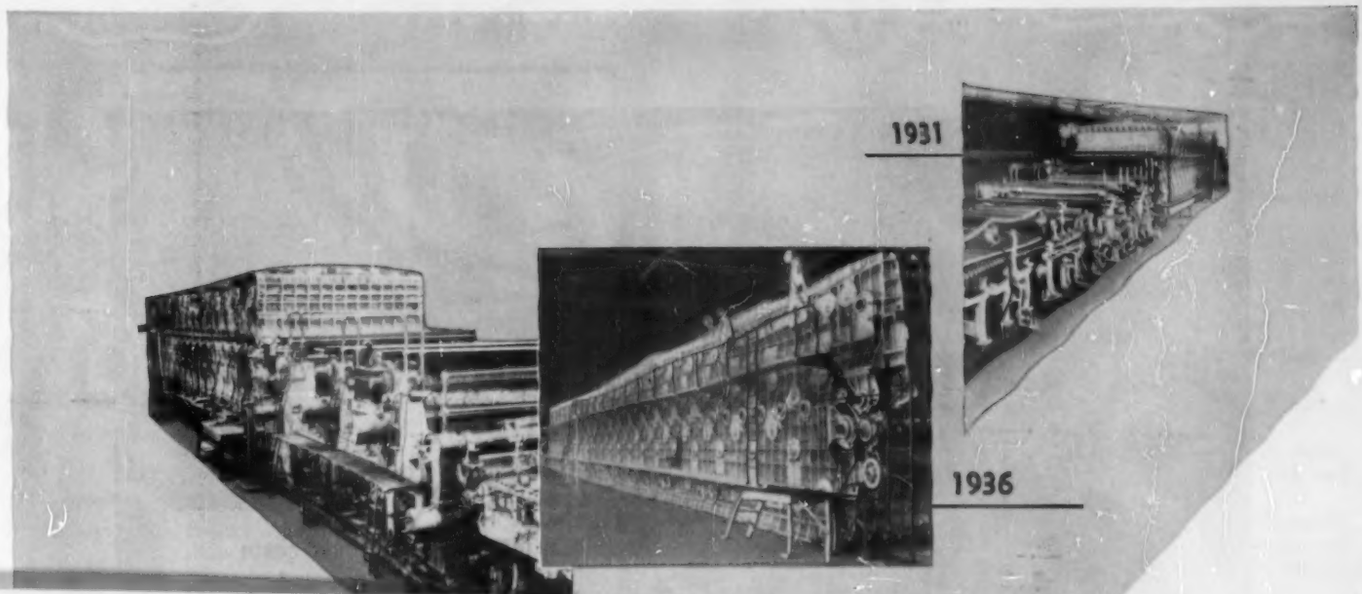
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They Must Like 'em



Weyerhauser Timber Company

have installed their fourth Rice Barton pulp machine with Minton Vacuum Dryer.

- Increased tonnage per dryer
- Lower steam consumption
- Less man hours per ton of pulp

Three good reasons why a Rice Barton Minton Vacuum Dryer may fit into your pulp picture.



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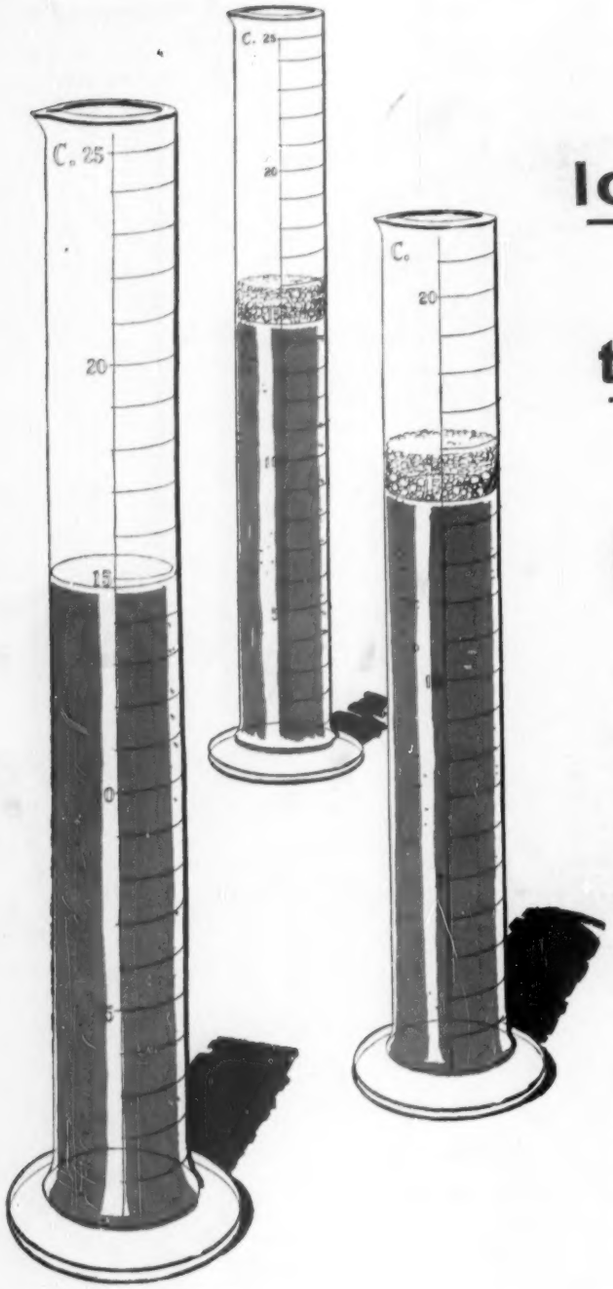
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RICE BARTON CORPORATION

Worcester, Massachusetts

Paper Machine Builders Since 1837

West Coast Distributor: Ray Smythe • • 501 Park Building • Portland, Oregon



you get

low foaming

in

three sizes

from

Cyanamid

Some mills prefer the high-sizing efficiency of a fortified size . . . some find a standard size works out best under their particular operating conditions . . . some find a dark size perfectly suitable.

But most mills find operating economy in the low foaming characteristic of Cyanamid rosin sizes.

Many mills have long benefited by this Cyanamid development – offered first in our ACCOBRITE® Rosin Size, and most recently in CYFOR® Fortified Rosin Size and FF Dark Rosin Size.

Take advantage of the selection offered you. Call our technical representative now to help you select the *right* size to suit your needs . . . and get the added advantage of *low foaming*.

CYFOR Fortified Rosin Size – in many mills low foaming CYFOR has produced higher sizing results at lower cost . . . reducing size consumption as much as 50% over standard sizes.

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RB 1-54

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Paper Machine Builders Since 1837

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Tough refuse conveying jobs are easy for Link-Belt combination drag chain

LINK-BELT offers the chain that's best for every job

THE many drive and conveying jobs performed by chains and sprockets in saw mills and paper mills require different physical characteristics. The *four* sizes of Class H combination drag chain for refuse conveying are an example of how Link-Belt builds a type and size for every purpose.

In addition, every chain in the complete Link-Belt line *is built* for longer life. Rigid control of raw materials and manufacturing processes is your assurance of absolute uniformity.

Ask for the new Folder 2445 for all the facts on Class H combination drag chain. And for information on the complete Link-Belt chain line, see your Link-Belt representative or distributor.

LINK-BELT COMPANY: Plants: Chicago, Indianapolis, Philadelphia, Colmar, Pa., Atlanta, Houston, San Francisco, Los Angeles, Seattle; Scarboro, Toronto and Elmira, Ont. (Canada); Springs (South Africa); Sydney (Australia). Sales Offices, Factory Branch Stores and Distributors in Principal Cities.

13,310

LINK-BELT

CHAINS & SPROCKETS

No one chain serves every purpose . . . get the RIGHT one from LINK-BELT's complete line



Roof-top pintle chain—for *transfer conveyors, each* strand presenting a sturdy, moving ridge.



Class C combination *chain—popular, durable,* low cost design for elevators, conveyors.



Class SS bushed roller chain with offset sidebars —for heavy drive service at moderate speeds.



Class H Pintle chain— excellent for conveyors that slide because of broad *wearing surfaces.*



Class 400 Pintle Chain— Closed end design keeps out dirt, makes excellent *service medium for drives,* elevators, conveyors.

PULP & PAPER

Production and Management Magazine of the Industry

January 1954
Vol. 28—No. 1

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COMMENT

Some Sage Remarks on This Industry

This industry has been way behind in the race of selling itself to the public.

Consider the remarks of Charles Sage, vice president of Kimberly-Clark, spokesman for this industry at Wisconsin's Silver Anniversary Forestry Conference in Milwaukee.

Wisconsin is advertised as a great beer state.

But it makes much more paper by tonnage.

Wisconsin is a dairy state—says its automobile car license legend, which millions of drivers and roadside observers read.

But all its millions of cows produce less milk, by weight, than the 1,750,000 tons of annual paper output of its 38 mills.

Wisconsin is the No. 1 state in pulp and paper sales and also in investment. Tonnagewise, it is third in paper, led by New York and Louisiana. It is sixth in woodpulp.

Wisconsin is fast becoming almost self-sufficient in wood, except for some spruce—an amazing thing. Mr. Sage predicted that over 25 years Wisconsin can profitably produce 1,250,000 cords a year instead of its present output of less than 600,000.

Some Fox River History

Papermakers from the Fox River Valley will be interested in knowing that just one year after George Washington was inaugurated first president of the United States, the government proposed to found the town of Neenah, Wisconsin, for the primary purpose of civilizing the Sac and Fox Indians who inhabited the banks of Lake Winnebago and the river valley.

This was in 1790 and led to settlement of Neenah several years before Menasha on the opposite north bank of the river. Log houses were built for the Indians, farming instructors were sent to them and a grist mill built. But the attempt failed because the Indians stabled their horses in the houses and kept on living in tepees. And they quit farming when they found the farmer-teachers were keeping produce for themselves during the training period.

Harrison Reed bought the site on auction and by 1846 it was pretty well settled again, its first birth, marriage and death being recorded in that year. As years passed, there came lumber mills, flour mills and foundries but later, several of these early manufacturers turned to papermaking, now the leading industry of the valley.

The Indians are gone (at least, the kind of wild Indians that first inhabited the area). And today the locale, scene of an unsuccessful attempt to bring civilization to its shores, has reversed the procedure. *It is doing a tremendous job of bringing civilizaton to the rest of the* world through the medium of paper.

What Taxes Mean to Employes

Charmin Paper Mills (formerly Hoberg) magazine *The Charmin Story* points out that it pays $1,331 per employe to the government in taxes, besides the $200 to $500 that each employe probably pays *himself.*

It suggests, and with good reason, that a part of the company's mil*lion dollar tax bill "could well have been spent for the employes'* welfare and to improve the plant."

Definition of an Engineer

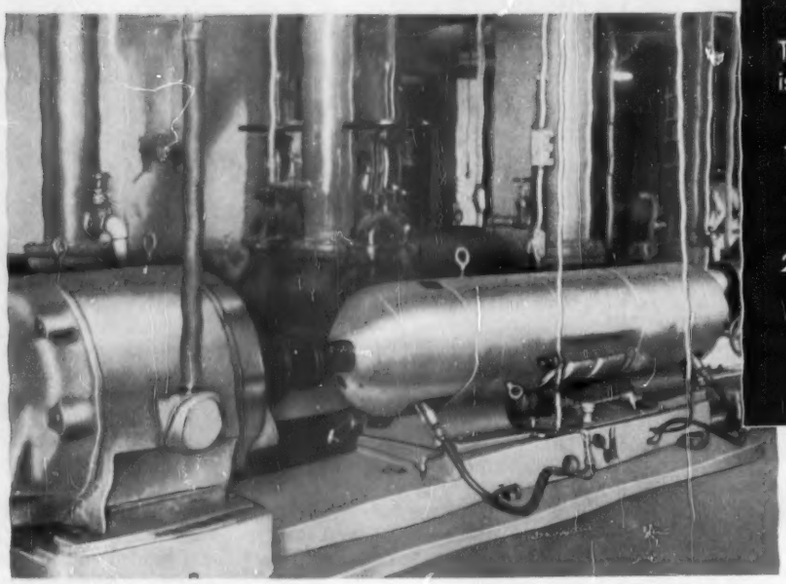
"An engineer is one who passes as an exacting expert on the *strength of being able to turn out, with prolific fortitude, strings of* incomprehensible formulae calculated with micrometric precision from extremely vague assumptions which are based on debatable figures acquired from inconclusive tests and quite incomplete experiments, carried out with instruments of problematic accuracy by persons of doubtful reliability and rather dubious mentality with the particular anticipation of disconcerting and annoying everyone outside of their own fraternity."—*The Electrical World.*

Importance of Wood and Cellulose

Cellulose is the most abundant organic chemical on the earth's surface and wood is the largest and most practical source of that material.

THE KEY TO THE PRODUCTION OF FINER FIBRE

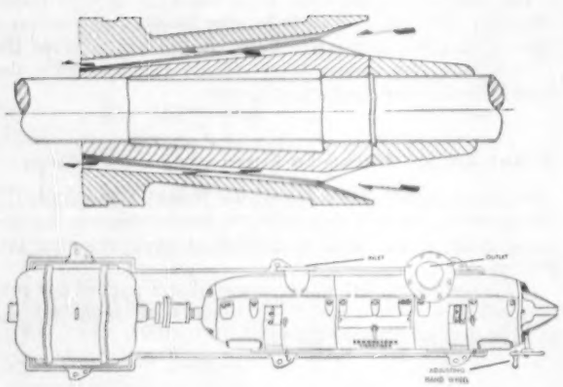
THE FIBREFINER



The refining of paper stocks is divided into two general categories:

1. Development of strength in primary fibres, such as virgin pulps.
2. The fibre separation of secondary stocks, such as waste paper, broke screenings and knots.

One of five Downingtown FIBREFINERS recently installed in a mill producing *gypsum grade liner.*



(Top) Cross section of the FIBREFINER *showing details of the* Farrell type plug and shell.

(Bottom) Plan view of the FIBREFINER *showing location of* inlet and outlet, and adjusting handwheel. One complete *turn of wheel changes bar clearance .00025".*

Write for Bulletin No. 1053 which describes the FIBREFINER in detail.

An efficient, easy to maintain refiner which can be used for both of the above types of refining must incorporate the following features:

1. A flat angle conical plug
2. Controlled pressure refining
3. Equal treatment of all fibres
4. A high tonnage to HP ratio
5. Accurate control of refining
6. Easy, low cost maintenance
7. High operating speed

The Downingtown FIBREFINER produces a finer fibre because of its unique and *exclusive* combination of *all* of these necessary features.

DOWNINGTOWN MANUFACTURING CO.
DOWNINGTOWN, PA.

West Coast Representative:
John V. Roslund,
Pacific Building,
Portland 4, Oregon

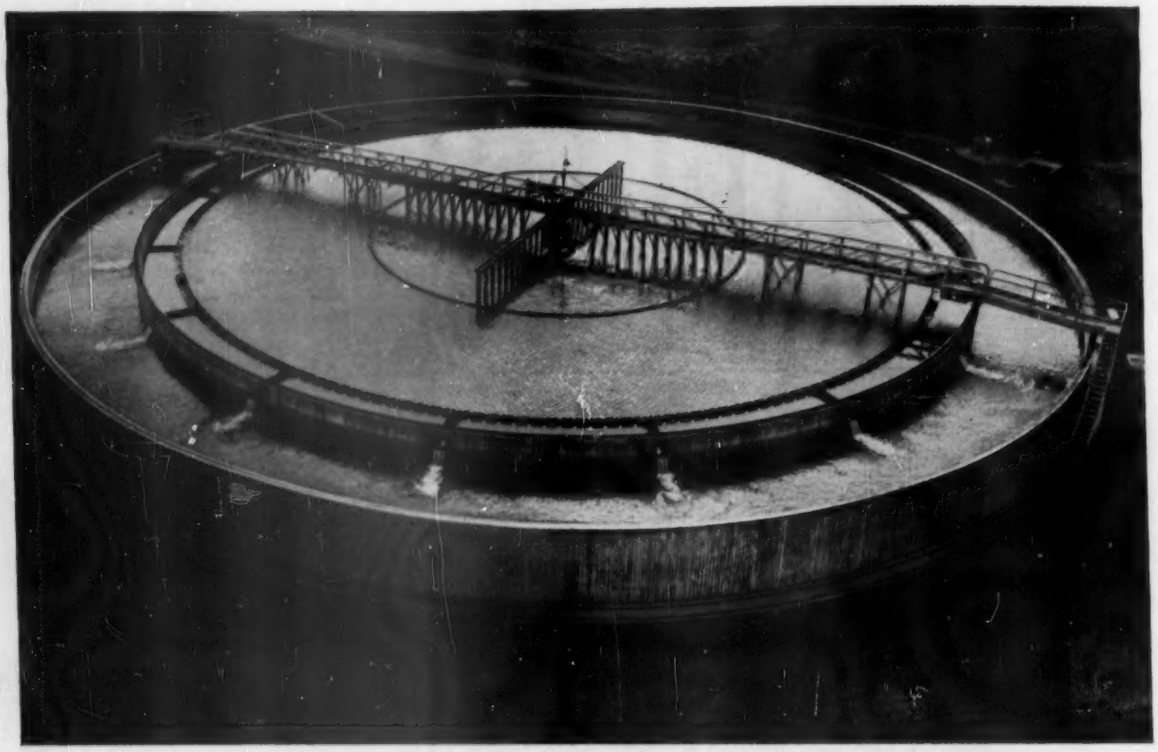
DOWNINGTOWN
DESIGNERS AND BUILDERS OF PAPER, BOARD AND FELT MACHINES SINCE 1860
MODERNIZATION IS PROFITABLE

Season's Greetings

At this Holiday Season, we again *renew our appreciative thanks for* the heartening confidence of so many friends through so many years.

. . . To all in the Pulp and Paper Industry, we extend every good wish for a happy and bountiful 1954.

GOTTESMAN & COMPANY, Inc.



Located at Fibreboard Products, Inc., Antioch, Calif., this Clariflocculator treats 14 MGD of San Joaquin River water for process use. A 15' wide annular storage reservoir surrounds the 150' dia. Clariflocculator and a Dorrco VM Pump removes the dense underflow at minimum water loss.



No "Magic Formula" Approach Here...

Supplying 14 MGD of clear, process water for a West Coast Pulp Mill called for more than a "magic formula." Like all well-designed water treatment plants, it called for a detailed analysis of the problem. Raw water composition, rate of flow, results required, and local conditions were all studied before selecting the type of treatment to be used. The most efficient answer in this case was combination treatment with a Dorrco Clariflocculator.

There is no magic formula for every type of water treatment problem . . . no single equipment unit that will give ideal results under all conditions. For a brief picture of the complete Dorr equipment line for both conventional and high-rate treatment, write for Bulletin #9141, The Dorr Company, Stamford, Conn.

Clariflocculator is a trademark of The Dorr Company, Reg. U. S. Pat. off.

Every day nearly 8 billion gallons of water are treated by DORR equipment

Better tools TODAY to meet tomorrow's demand

DORRCO

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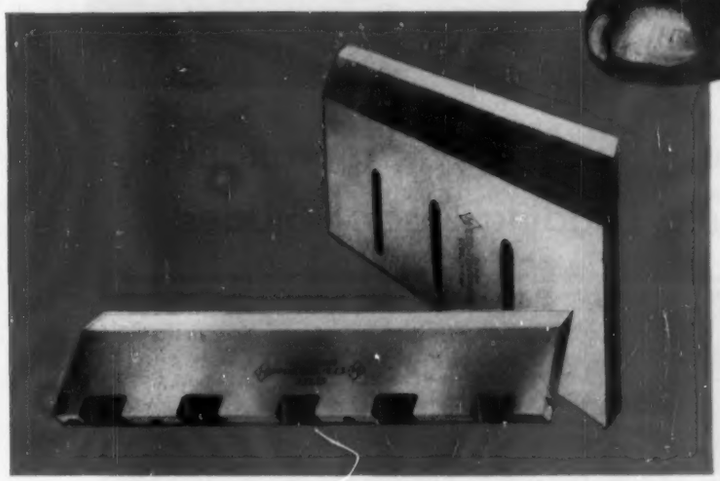
THE DORR COMPANY • ENGINEERS • STAMFORD, CONN.

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built for
rugged action



Heppenstall
CHIPPER KNIVES
durable blades for industry



Many leading pulp mills make Heppenstall their standard specification for chipper knives. Heppenstall's record for durability provides such production advantages as:

- **MORE CUTS BETWEEN GRINDS**
- **LESS OVERSIZE CHIPS**
- **LESS DOWN TIME**
- **LOWER OVERALL BLADE COST**

The reasons may be found in Heppenstall's high standards for the development and manufacture of chipper knives. Made from high quality, electric induction steels, these long-lasting knives are famous throughout the pulp producing industry.

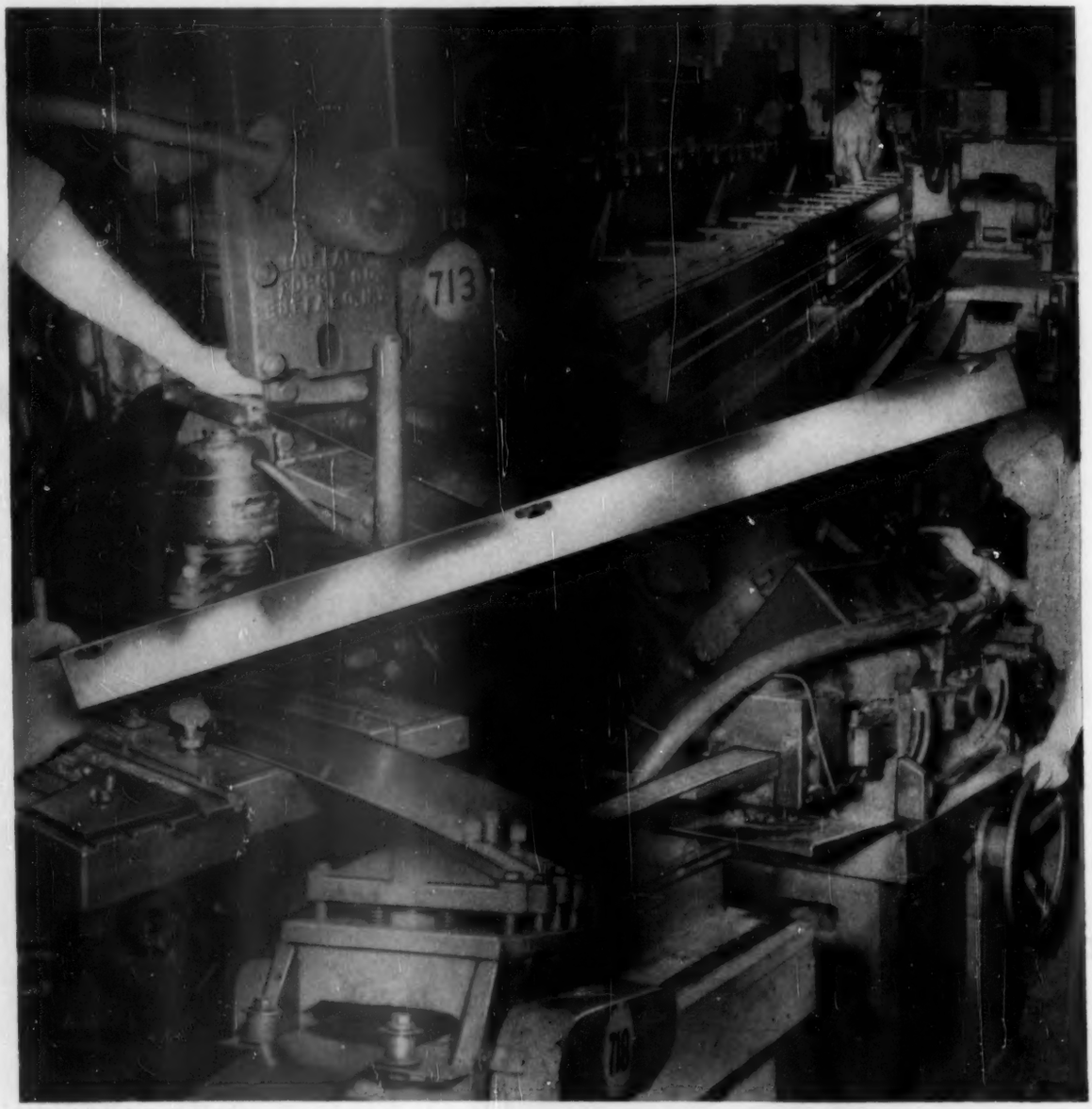
Make Heppenstall *your* standard specifications.

Heppenstall

The most dependable name in forgings

PITTSBURGH 1, PENNSYLVANIA

Sales offices in principal cities



Take a look at some of the many operations that build precision into Lodding Doctor Blades

LODDING ENGINEERING CORPORATION
WORCESTER, MASSACHUSETTS
REPRESENTED BY
W. E. GREENE CORPORATION • WOOLWORTH BLDG., NEW YORK

For makers of Quality Papers

Albacel — Bleached pine sulphate . . . the cleanest pulp of its kind available from any source. Outstanding for overall strength.

Super Albacel — A special grade of Albacel pulp with the additional quality of outstanding brightness.

Astracel — The perfected bleached hardwood sulphate . . . made from carefully selected species of southern hardwood trees which yield the longest and finest hardwood fibre available. Astracel has the excellent forming qualities found in northern hardwoods . . . *plus great strength*. Chlorine dioxide bleaching imparts unusual brightness.

BLEACHED WITH CHLORINE DIOXIDE

Three bleached sulphate pulps, originally created to the exacting standards of the Riegel Paper Mills, are now available to all makers of quality papers. The cleanliness of these pulps is unsurpassed and their strength and brightness outstanding.

They are produced at Riegel Carolina's new pulp mill at Riegelwood, N. C., with every refinement and control known to modern pulp manufacture. A dependable source of pulpwood is assured by nearby Riegel Woodlands, under Riegel planned forest management since 1937.

Riegel Carolina Pulps

Created by Papermakers for Papermakers

RIEGEL PAPER CORPORATION • 260 MADISON AVENUE • NEW YORK 16, N. Y.

Asten DRYER FELTS



Chasing the mechanical "bunny" is like trying to make a dryer felt that will equal the performance of an ASTEN made with infinite care for individual grade and mill conditions.

Economy in the long run

ASTEN-HILL MFG. CO.
PHILADELPHIA, PENNA.

ASTEN-HILL LIMITED
VALLEYFIELD, QUEBEC

Pulping of Hardwood Now Practical

ADVANTAGES OF AMMONIA BISULPHITE PULPING CONFIRMED

By Gordon A. Crowe

Technical Service Representative, Spencer Chemical Co., Kansas City, Mo.

BECAUSE OF THE LIMITED availability of softwoods in many parts of the country, a number of pulp mill operators are interested in the efficient pulping of hardwoods, such as beech, birch and maple. These operators will be encouraged by the results which have been obtained with ammonia base cooking.

23-Day Ammonia Test Run

ONE MILL especially interested in pulping hardwoods recently conducted a 23-day ammonia test run. Their carefully charted results show definitely that beech, birch and maple can be pulped easily in about seven hours' cooking time. Even more important, they discovered that the use of only a small percentage of these hardwoods quickly pays for the increased cost of ammonia base!



Gordon A. Crowe

OTHER CONCLUSIONS reached by the Technical Department of the mill making this test:

1) Ammonia base pulp gave increased yields when the regular mixture of softwoods was used.
2) Cooking time for softwoods was reduced by at least one hour.
3) Pulp quality was as good as and probably slightly better than the regular calcium base pulp.
4) Digester operation is more uniform when ammonia is used due to clean circulating systems.
5) Bleaching time and chemical requirements can be reduced when the pulp is made from ammonia base acid.

Information Available

IF YOU HAVE A QUESTION about Ammonia Bisulphite pulping, *we'll be glad to hear from you.* There is no charge or obligation for this service. Just write: Technical Service Section, Spencer *Chemical Company, Dwight* Bldg., Kansas City 5, Missouri.



AMERICA'S GROWING NAME IN CHEMICALS

AT PORT ALBERNI, B.C.

Productive Log Barking

is "teamed up" with ADAMS *Automatic* WATER FILTERS



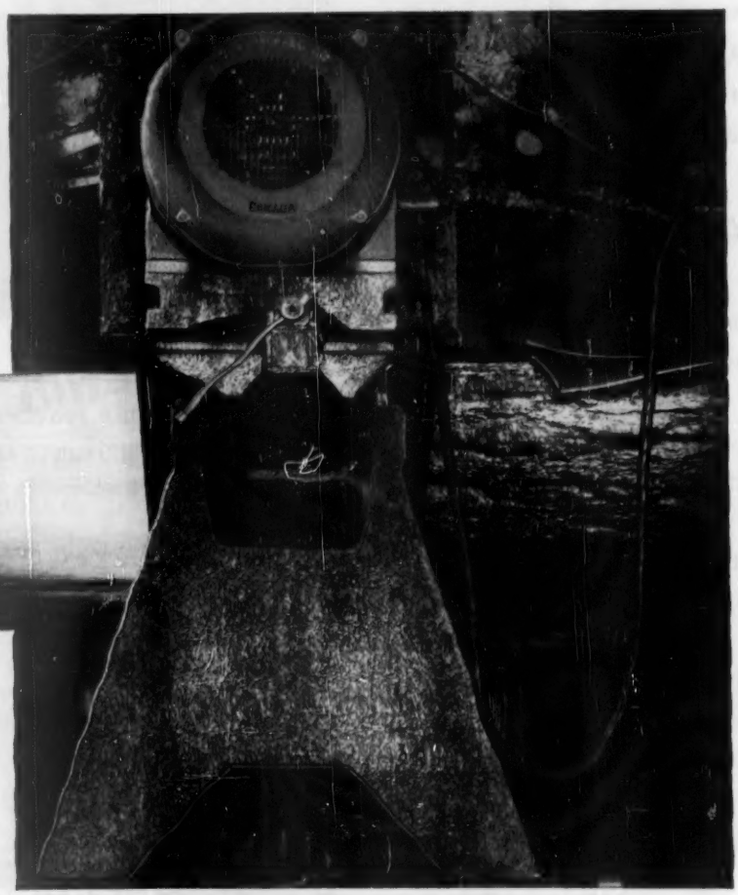
To convert raw water into a tool that blasts bark from logs of any shape or size, *Bloedel, Stewart & Welch* installed a matched team of Adams Automatic Water Filters ahead of their new Hansel hydraulic barkers.

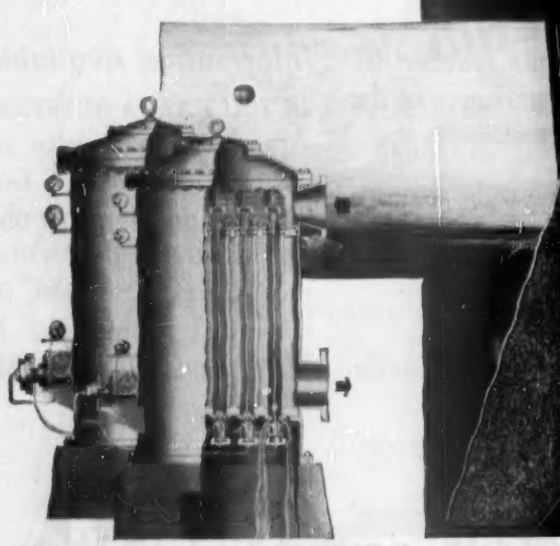
Of critical importance in the barker's continuous, fast production and low maintenance are the films of lubricating water for seal rings as well as for main and thrust bearings. Complete removal of abrasive solids from the Port Alberni water source was necessary if precision-machined surfaces in both the barker and the high pressure pumps were to deliver full performance.

Experiment under actual conditions proved the need for a filter that would not only remove all solids down to 40 microns, but would backwash automatically — a clear case for the Adams AWF Filter with exclusive Adams Poro-Stone Filter tubes. ". . . Adams filters were installed and are performing admirably", states B. S. & W. resident manager.

If you would convert water — your cheapest raw material — into an efficient production tool for pulp, paper, and saw mills, it will pay you to investigate the R. P. Adams line of water filters now.

Send today for new 20-page, file size Bulletin No. 691 on Water Filtration in the Pulp and Paper Industry.





ADAMS AWF WATER FILTERS

HANSEL 60" RING BARKER

R. P. ADAMS CO., INC.

210 E. PARK DRIVE BUFFALO 17, N. Y.

When the Heat's On*

Exchangers Stay on the Line LONGER

...with *Carpenter* Stainless Tubing



At the left are pictured a group of heat exchangers and heaters in service on widely diverse jobs, in all parts of the country. They have one thing in common —the Carpenter Stainless Tubing that keeps them on the line longer—*when the heat's on for production.

Modern process equipment like this has to stay on the job. You can't afford to interrupt a process for hours or days to replace tubes.

That's why—after considering many sources—more and more orders call for Carpenter Stainless Tubing. They know that the quality standards we set at the mill will safeguard the quality reputation of their equipment.

Analysis, Tolerance and Finish are guaranteed to be "as ordered" on every shipment of Carpenter Stainless Tubing.



Send for this USEFUL SLIDE CHART

Physical properties, sizes and gauges, cross-sectional areas, velocity constants, pressures, weights and other technical data on Carpenter Stainless Tubing for heat exchanger applications are condensed into this handy chart. It's yours for the asking, on your company letterhead.

The Carpenter Steel Company, Alloy Tube Division, Union, N. J.

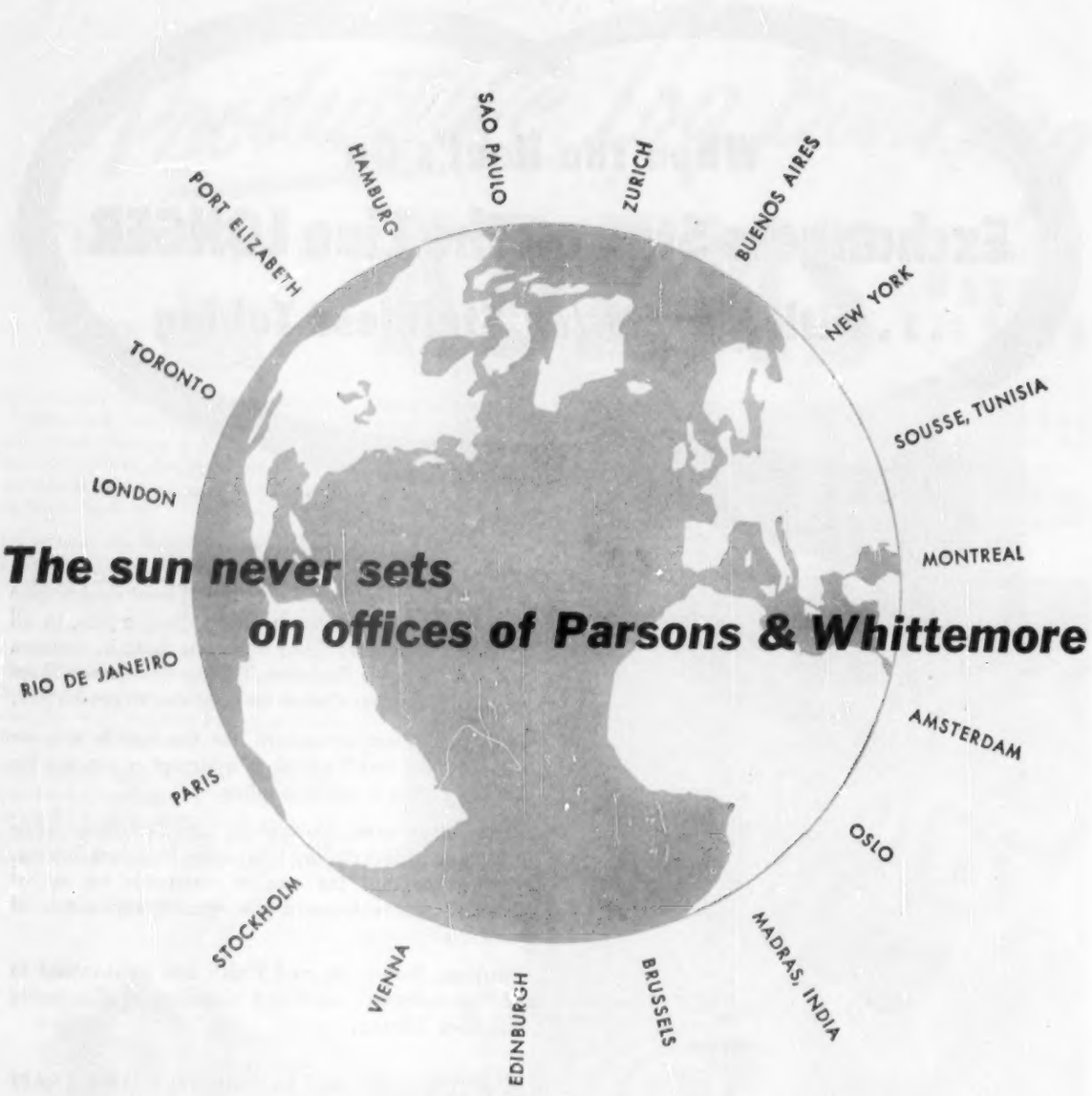
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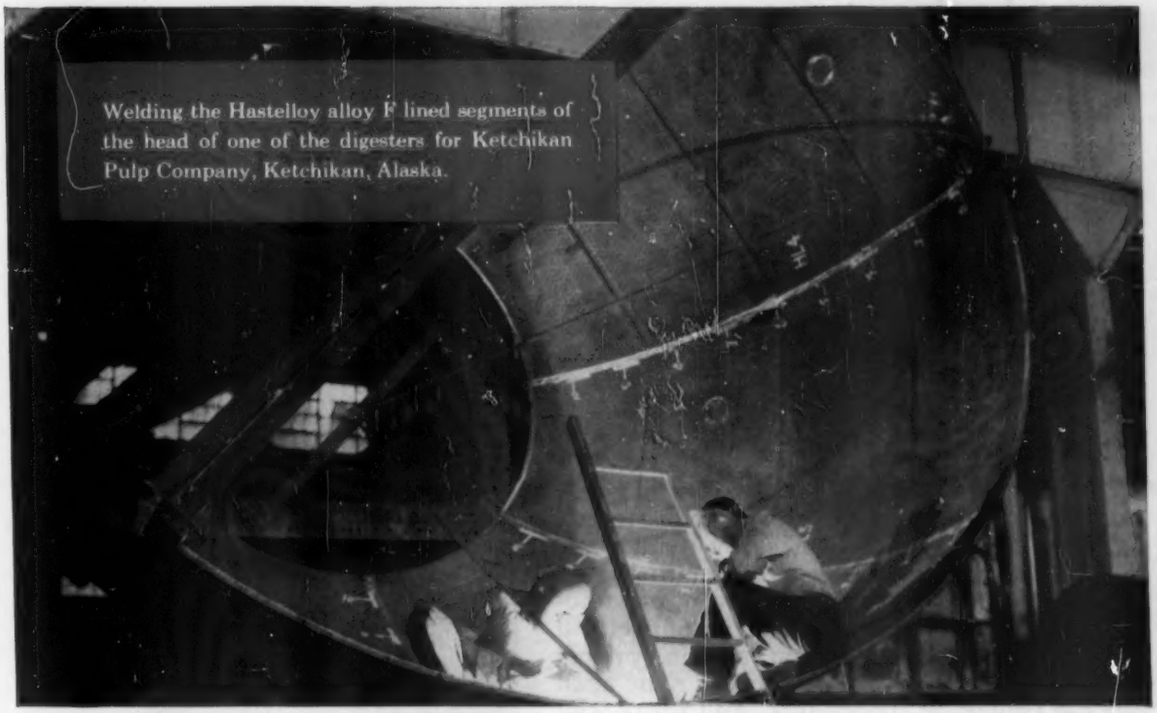


The sun never sets
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for **pulp**
paper
paper-making machinery
graphic machinery

LYDDON & CO., 35 New Bridge St., **London EC4, England**

PARSONS & WHITTEMORE, 250 Park Ave., **New York 17, N. Y.**



Welding the Hastelloy alloy F lined segments of the head of one of the digesters for Ketchikan Pulp Company, Ketchikan, Alaska.

Two alloys are SMITHlined in a single digester

for both liquor and vapor corrosion problems

will provide protection for Alaska's first pulp mill at Ketchikan

An unparalleled research and testing program which A. O. Smith metallurgical engineers have been and are conducting with the paper industry, now provides reliable corrosion-rate data on alloy digester materials. With corrosive attack differing in the vapor area of the dome of sulphite digesters from that on areas in contact with the liquor, the most satisfactory and economical answer was to provide the alloy most suitable for each corrosive attack.

Here the flexibility of the exclusive SMITHlining process excels. With it, two different types of alloy lining are resistance spotwelded to the carbon steel backing of the digester. For example, digesters being fabricated for Ketchikan Pulp Company, Alaska's first pulp mill, will have type 316L (.03% maximum carbon) stainless lining in the area in contact with the liquor, but Hastelloy alloy F* as lining in the vapor area of the dome.

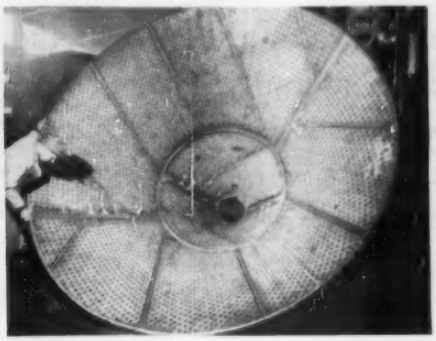
Six 17′ by 58′ digesters for Ketchikan are being fabricated and lined as described. They will produce pulp by the Magnesium Bisulphite (MgO) process. After they have been in service, two periodic inspections by A. O. Smith metallurgists will be made with mill personnel who will learn how to make future inspections and evaluate conditions correctly. This is a service we render to satisfy ourselves as well as our customers on the performance of digesters we supply.

*Registered trade name of Haynes Stellite Company, a Division of Union Carbide & Carbon Corp.

Inspecting the type 316L (.03% maximum carbon) lining in a shell course of the digester.



Inspecting the type 316L (.03% maximum carbon) lining of the digester cone.



May we assist you on your next vessel problem?

A.O.Smith
CORPORATION
VESSELS • HEAT EXCHANGERS
Milwaukee • Houston
International Division: Milwaukee 1, Wisconsin, U.S.A.
Licensee in Canada: John Inglis Co., Ltd.

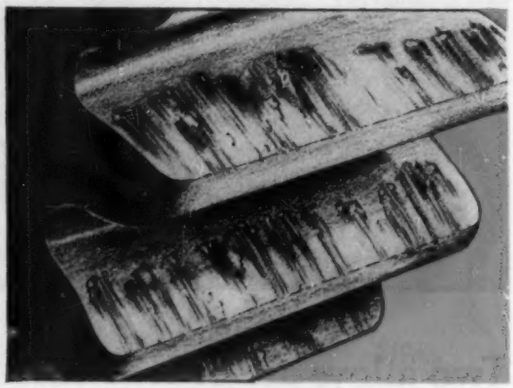
switch to

GULF E.P. LUBRICANTS

and get the benefit

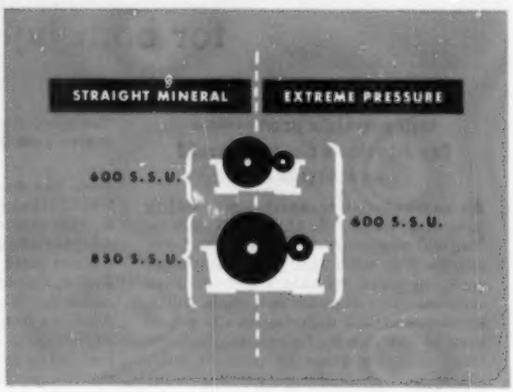
1 **More effective protection against tooth scoring and welding**

Gulf E. P. Lubricants have proven ability to protect gear teeth against damage by scoring and welding. They are specially compounded to provide extra film strength and to prevent metal-to-metal contact under most conditions of overload and shock load. That's why you can usually avoid tooth damage like that shown at the right when you use Gulf E. P. Lubricants. And that's why they provide an extra margin of protection when production demands approach or exceed the rated capacity of the equipment.



2 **Fewer lubricant grades needed— lubricant storage and handling simplified**

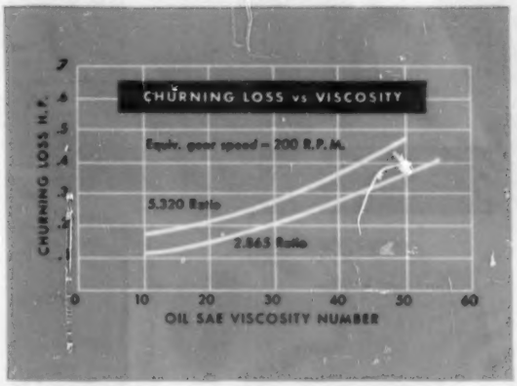
Because Gulf E. P. Lubricants have superior film strength, it is often feasible to use a lower viscosity grade than would be possible with a straight mineral oil. This is a practical advantage for plants operating several different types of gear drives. If, as pictured at the right, two straight mineral oils of different viscosity are specified, one grade of Gulf E. P. Lubricant may well do the job of both. Thus lubricant storage and handling is simplified, and there is less chance for confusion in the oil house.



Gulf E. P. Lubricants are available in the proper viscosity for every gear requirement, ranging from 55 to 1000 SUV at 210 deg. F. For specific recommendations for your equipment, call in a Gulf Sales Engineer. Write, wire, or phone your nearest Gulf office, or send the coupon.

for enclosed gear drives

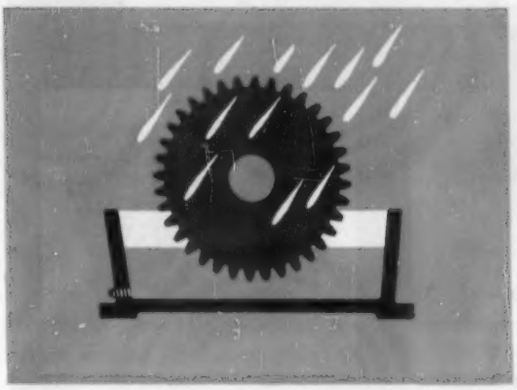
of these practical advantages:



3 **Reduced power loss caused by churning in splash-lubricated units — lower power costs**

There is another advantage in using a lower viscosity oil in splash-lubricated units where power loss due to churning is appreciable. Since this loss is almost directly related to oil viscosity, the use of lighter Gulf E. P. Lubricants often means reduced heat generation and lower power costs.

The chart at the left shows the effect of viscosity on the churning loss in horsepower of a typical gear unit.



4 **Excellent protection against rust**

The ability to protect polished gear teeth and antifriction bearings against rust is an important property of a gear lubricant, and is essential in a lubricant for units which are occasionally idle.

Gulf E. P. Lubricants have highly effective rust preventive properties—insure against excessive wear and enlarged tolerances which might result from the presence of abrasive rust particles.

GULF INDUSTRIAL LUBRICATION

GULF OIL CORPORATION • GULF REFINING COMPANY
1822 Gulf Building, Pittsburgh 30, Pa. P&P

Gentlemen:
I would like further information on Gulf E.P. Lubricants:

- ☐ Please have a Gulf Sales Engineer call.
- ☐ Please send me a copy of your pamphlet "Gulf E.P. Lubricants for Reduction Gear Drives."
- ☐ Please arrange to show a group in our plant the new Gulf Color Slide Film, "Gears and Their Lubrication," Part I.

Name_____

Company_____

Title_____

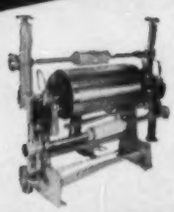
Address_____

6 new additions in '53

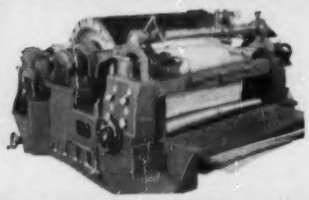
DILTS CONVERTING MACHINE LINE STILL EXPANDING

The answer to your toughest production problem *may lie in the installation of some Dilts machine* designed for your type of operation . . . perhaps *one of the six major developments in the* converting machinery field designed and *engineered by Dilts during the past year.*

Proved in operation and now available to you, the six machines shown here are *the latest additions to the finest and* most complete line of equipment for *converters. Write to Dilts at Fulton* for information on the Dilts line of converting equipment. Ask for Bulletin 311.



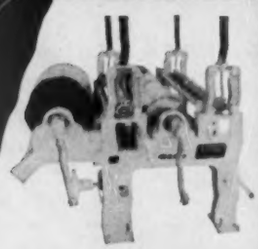
Ferrisplice Continuous Unwinder



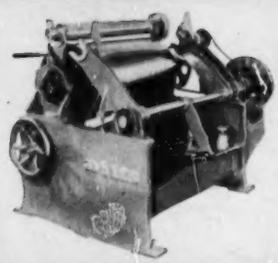
Polyethylene Extrusion Laminator



Flexographic Press



Hot Melt Kiss Coater



Surfastart Continuous Winder



Model 20 Two Arm Winder

THE BLACK-CLAWSON COMPANY
DILTS MACHINE WORKS DIV.
FULTON, NEW YORK

Dilts



These jackets are made of BOLTON'S own alloy of stainless steel to be welded to the foundation of any cast iron or cast steel plug. Stainless End Plate and Stainless End Plate Rings are used to give protection from corrosion to all exposed surfaces. Different sizes of knives can be used without change in the plug body.

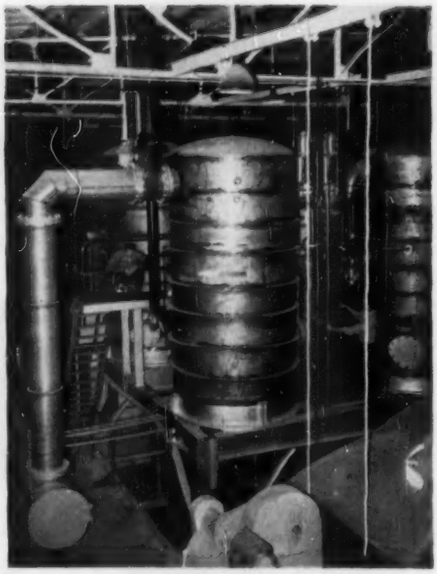
Call our Representative for details . . .

John W. BOLTON & Sons, Inc.

EMERSON MANUFACTURING DIVISION

Lawrence, Massachusetts, U.S.A.

dependable process equipment built to fit your needs



FOR WASTE SULPHITE LIQUOR—Conkey Flat Plate Evaporator with Rosenblad Switching System is noted for continuous evaporation of sulphite pulp mill waste liquors. Self-cleansing action washes away accumulated scale by condensate wash of *all* parts, making possible continuous capacity operation.

CONKEY EVAPORATORS

for waste liquor concentration



FOR BLACK LIQUOR—Conkey Long Tube Film Type Evaporator is widely used for waste liquors whose concentration does not require mechanical cleaning of heating surfaces for scale removal. Provides a net positive gain in evaporation by reducing pressure drop losses between effects.

PROCESS EQUIPMENT DIVISION
GENERAL AMERICAN

Process Equipment Division

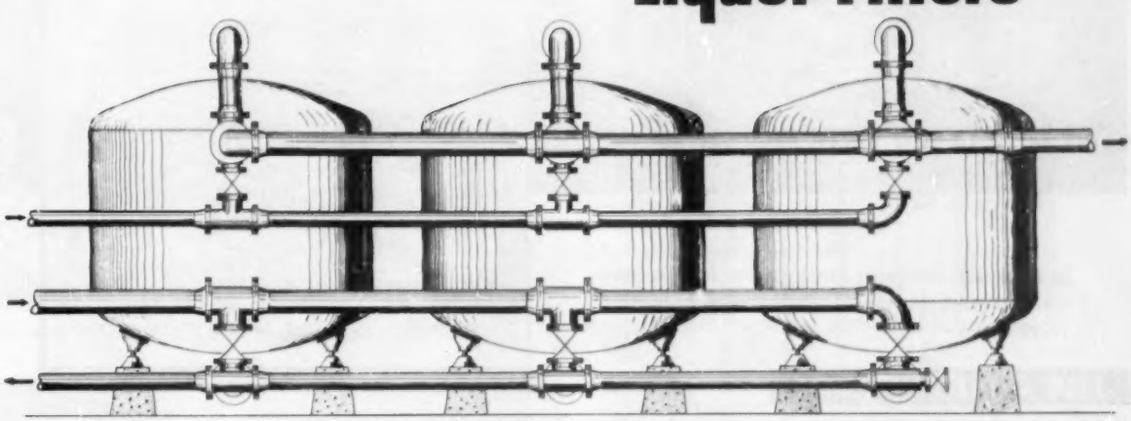
Send for latest bulletin on Evaporators

GENERAL AMERICAN TRANSPORTATION CORPORATION
Sales Office: 380 Madison Ave., New York 17, New York
General Offices: 135 South La Salle Street, Chicago 90, Illinois
In Canada: Canadian Locomotive Company, Ltd., Kingston, Ontario
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IMPROVE → **Kraft and Soda Mill Operations**

WITH → **INFILCO Cooking Liquor Filters**



TO

1. Increase pulp purity and brightness by removing calcium carbonate and iron.
2. Reduce caustic requirements by using filtered cooking liquor for caustic extraction.
3. Eliminate scale in heaters and in piping.
4. Increase liquor room capacity.
5. Improve sizing efficiency.

INFILCO engineers can assist whenever cooking filtration, water purification or mill waste treatment are being considered. **WRITE TODAY.**

MORE INFORMATION...NO OBLIGATION

INFILCO INC., P. O. Box 033-L, Tucson, Arizona.

Please send more information regarding:

( ) Water purification ( ) Cooking liquor filtration

( ) Mill waste treatment ( ) Please have Field Engineer call

NAME_____

TITLE_____

COMPANY_____

ADDRESS_____

CITY_____ STATE_____

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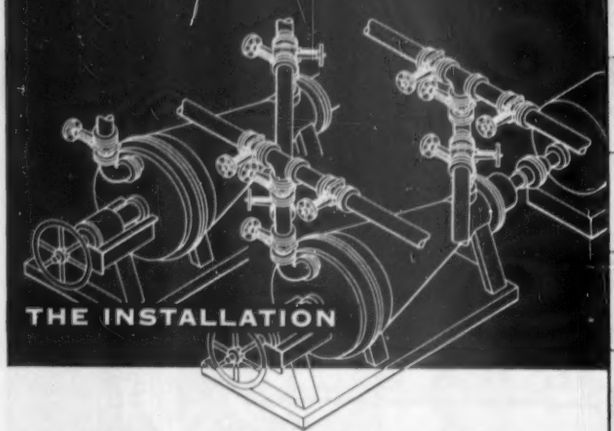
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Plants in Chicago and Joliet, Illinois

FIELD OFFICES IN 26 PRINCIPAL CITIES

Handling Pulp Stock As No Other Valve Can

...in Jordan Room, for instance



THE INSTALLATION

In a leading Southern kraft pulp and paper products mill, now standardized on Crane Pulp Stock Valves.

VALVE SERVICE RATINGS

SUITABILITY:	Best by test
FEATURES:	Non-jamming – Non-Clogging
MAINTENANCE COST:	Lowest ever
SERVICE LIFE:	Many in use since 1936
OPERATING RESULTS:	No shutdowns for valve trouble
PRICE:	O.K. – worth every penny
AVAILABILITY:	Regular Catalog item – No. 1427

THE CASE HISTORY

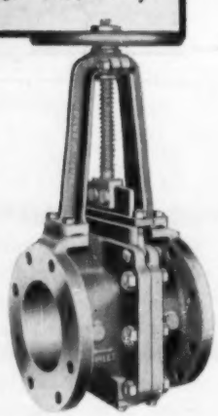
Clogged-up, hard-to-clear valves were a problem in this mill's operation until about 17 years ago. That's when Crane Pulp Stock Valves were announced, marking the turning point from frequent valve trouble to valve satisfaction.

Crane valves were first installed in high consistency stock lines to Jordans—later, in piping to head boxes, stock chests, pumps, etc. Today, with hundreds of these valves in service, the scheduled replacement of all out-moded valves is almost done.

There have been no machine shutdowns—because Crane valves never clog. Workers say they're always easy to operate. Maintenance costs are low. Most of the Crane valves originally installed are still on the job.

THE VALVE

It shears its way through pulp fibers to seat tightly. Its knife-edge disc can't get jammed. It's bonnetless, and the body has no pockets where pulp can pile up and clog operation. It's self-cleaning. That's why Crane Pulp Stock Valves are the "standard" in pulp and paper mills. See your Crane Catalog, or ask your Crane Representative for folder AD1908.



THE BETTER QUALITY... BIGGER VALUE LINE... IN BRASS, STEEL, IRON

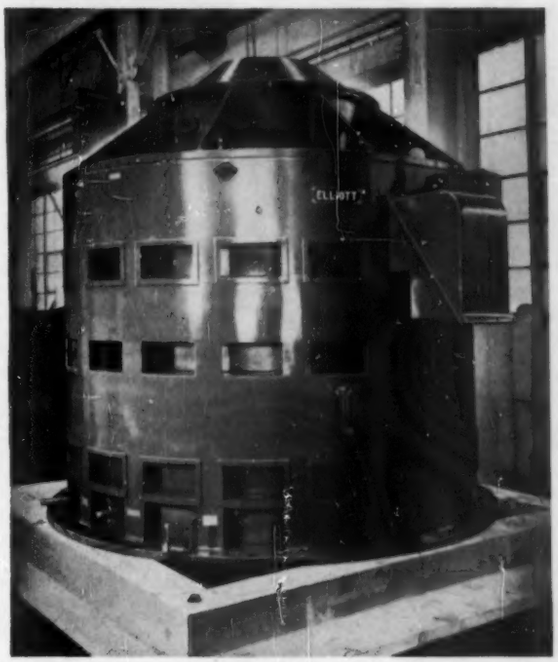
CRANE VALVES

CRANE CO., *General Offices:* 836 S. Michigan Ave., Chicago 5, Illinois
Branches and Wholesalers Serving All Industrial Areas

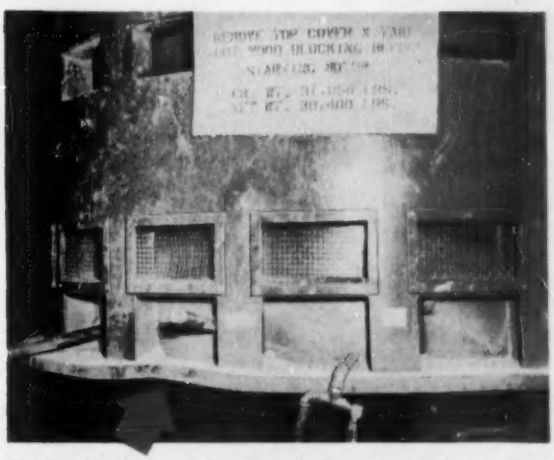


VALVES • FITTINGS • PIPE • PLUMBING • HEATING

What happened when a 15-ton motor dropped 25 feet!



The motor, good as new, after required repairs and repainting.



The bend in the base ring—the only damage to the frame, which upon disassembly checked absolutely true on the boring mill.

Construction accident conclusively proves the enduring rigidity of ELLIOTT Fabri-Steel motor construction.

It hit with a smack that shook everything for a hundred yards around, when the crane accidentally let go of this big Elliott 2000-hp, 8-pole vertical induction motor while the motor was 25 feet in the air, during installation at a southwestern utility plant. Customer's engineers, witnessing the accident, assumed 100 per cent loss of the motor.

Not so with an Elliott motor with its all-welded steel frame and stator. For here's all that happened to it:

No damage to internal parts of stator or rotor.

Base ring bent between two ribs — easily corrected (see photo).

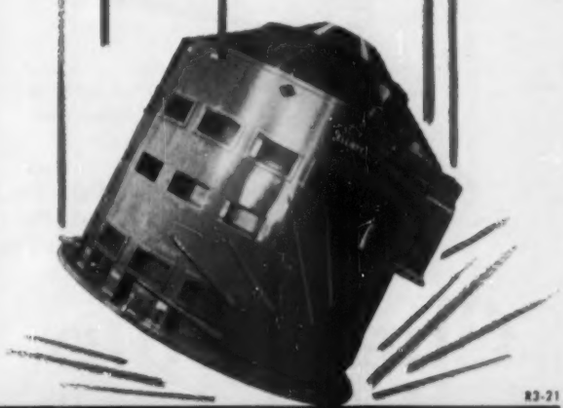
Shaft bent .0034 in. — readily straightened.

Rotor driven up into motor, but stopped by heavy bracket.

Lower oil pot, one baffle, and top cover only needed replacement.

Minor damage to Kingsbury thrust bearing and upper guide shoes. No damage to bottom guide bearing.

And that's all. A demonstration of shock-resistance that would do honor to an army tank. If you want real stiffness in a motor, check on Elliott Fabri-Steel construction — see your local Elliott engineer or write Elliott Company, Ridgway, Pa.



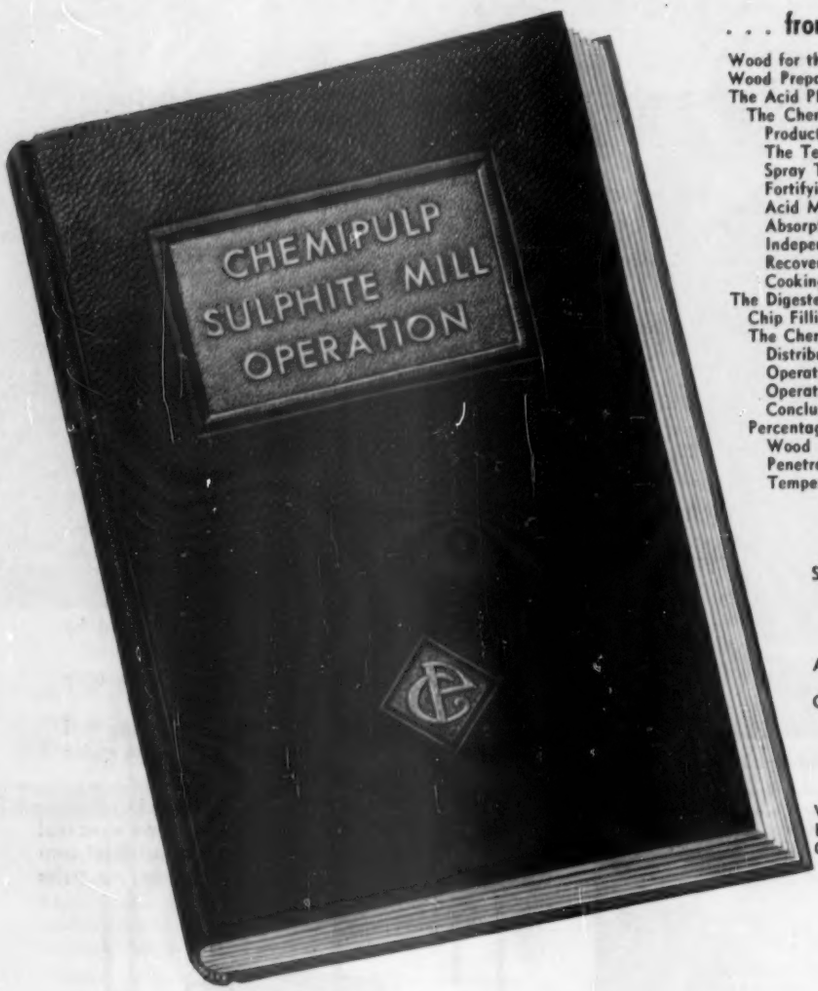
R3-21

Elliott FABRI-STEEL MOTORS AND GENERATORS

ELLIOTT Company RIDGWAY DIVISION

FOR MOTORS 1-200 HP CROCKER WHEELER DIV. AMPERE, N. J.

It's Out . . . New and Revised



. . . from the TABLE OF CONTENTS

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This edition is illustrated and well supplied with cuts and tables.

COPIES OF REVISED EDITION OF "CHEMIPULP SULPHITE MILL OPERATION," THE HANDBOOK OF PRACTICAL OPERATION PROBLEMS, ARE AVAILABLE FREE TO ALL USERS OF CHEMIPULP PROCESS EQUIPMENT.

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WOOD PULP

PAPER



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BULKLEY, DUNTON PROCESSES, INC.
In New England—
CARTER, RICE & CO. CORPORATION
and STORRS & BEMENT COMPANY

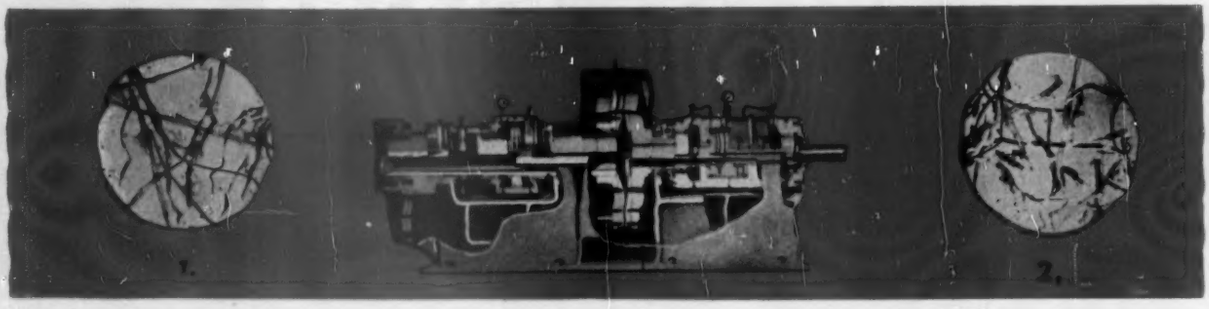
BULKLEY, DUNTON
ORGANIZATION
295 MADISON AVENUE, NEW YORK 17, N. Y.

Offices and representatives in 60 cities
in the United States, Europe, Latin America, Africa, and Asia



FIGURE 1. A typical Sutherland-treated pulp. Note the *length of the fibrils, many of which are still attached to the parent fibers. Thoroughly beaten and refined, the fibers have, nevertheless, not been seriously weakened and chopped up in the process.*

FIGURE 2. *The effect produced by a Jordan on the same pulp at the same freeness. It can be seen that the fibers have been chopped up into segregated fines, impairing fiber quality and sacrificing many desirable qualities in the finished product*



. . . SUTHERLAND REFINER

As a result of the Sutherland Refiner's *controlled, continuous beating process you* get a controlled fiber quality. This means:

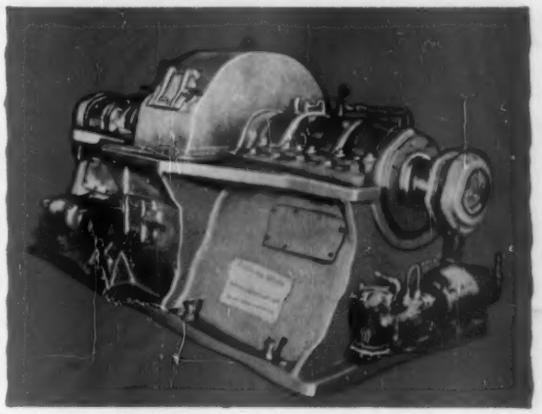
1. Day in and day out—the *right* fiber qualities to meet the required sheet specifications. *Improved quality. Dependable quality.*

WITH THESE ADDITIONAL ADVANTAGES . . .

2. *HIGHER TONNAGE* . . . On a wide variety of applications, Sutherlands have repeatedly demonstrated their ability to produce quality products at increased machine speeds *because of the faster drainage and* drying qualities of Sutherland treated pulps. This means greater production . . . *higher tonnage* . . .

3. *REDUCED OPERATING COSTS* . . . Lower power and maintenance *costs—plus increased production—* mean a substantial reduction in operating costs per ton of paper . . . add *up to one of the essential features of* mill modernization.

4. *HIGHER OPERATING EFFICIENCY* . . . *Less down time, less* rejected paper, and low floor space requirements result in more tons of



quality paper year in and year out . . . *increased efficiency . . . and* greater profit.

These are the advantages of Sutherland Refiners, advantages that are being demonstrated by more than 400 Sutherlands in mills throughout the country. Write for *your copy of an article outlining one mill's* experience. It will be furnished promptly . . . without obligation.

We're sure you'll find it *very* interesting—it *could* well be *your* experience.

SUTHERLAND REFINER CORPORATION

TRENTON 8, NEW JERSEY

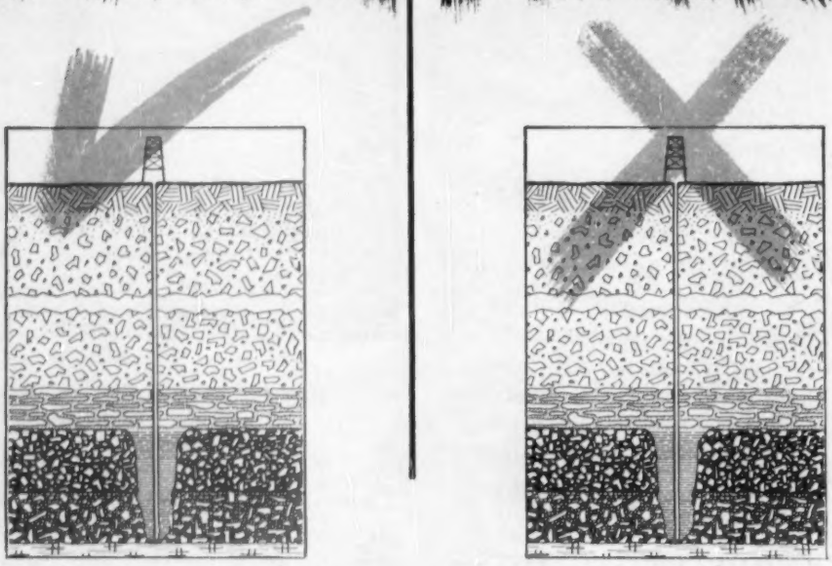


BREAKER TRAPS • PRESSURE WASHING • HIGH YIELD SYSTEMS

MANUFACTURED BY—
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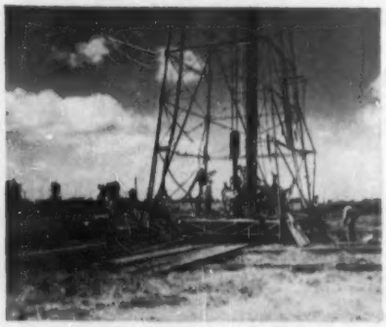
SULPHUR

...why can't *Every* dome produce sulphur?



The production of sulphur in the Gulf Coastal Region of Louisiana and Texas by the Frasch Process, is from underground natural beds found in "domes." However, very few domes have been found to contain sufficient sulphur, if any, to be brought into production.

It is estimated that nearly 200 dome structures along the Coast of the Gulf of Mexico have been investigated over the last half-century but only fourteen have produced sulphur in quantity.



And the presence of sulphur, even in quantity, doesn't always mean a successful producer. Some years ago a dome was found, explored, and proved with the result that a plant for the production of sulphur was erected at a cost of several million dollars. Later it had to be abandoned because the underground conditions did not lend themselves to the use of the Frasch Process.

A dome is a sulphur mine only when it can be worked economically and produce sulphur in commercial quantities.

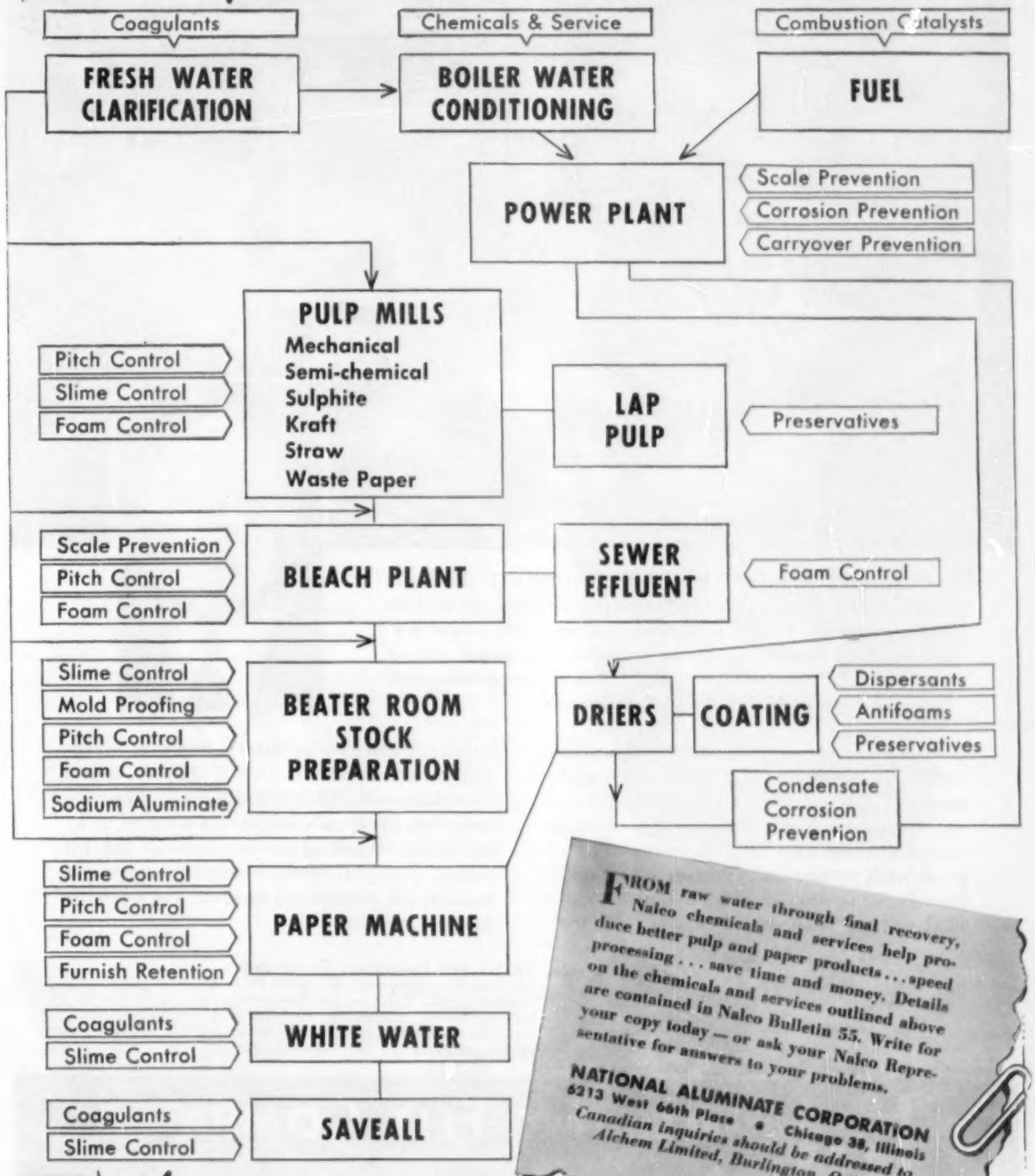
Texas Gulf Sulphur Co.

75 East 45th Street, New York 17, N. Y.

Sulphur Producing Units

- **NEWGULF, TEXAS**
- **MOSS BLUFF, TEXAS**
- **SPINDLETOP, TEXAS**
- **WORLAND, WYOMING**

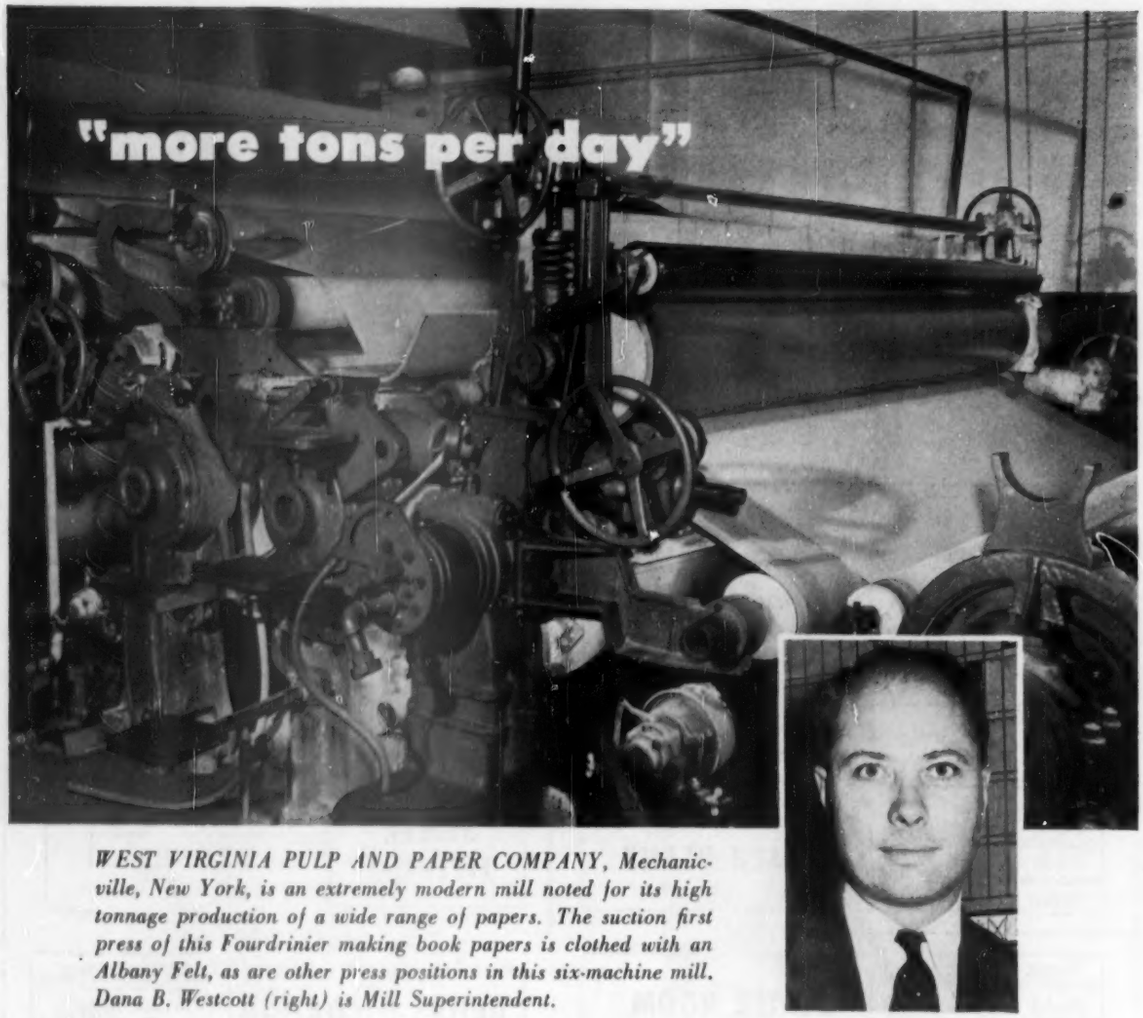
CHECK CHART of nalco® PRODUCTS and SERVICES for the PAPER INDUSTRY



FROM raw water through final recovery, Nalco chemicals and services help produce better pulp and paper products . . . speed processing . . . save time and money. Details on the chemicals and services outlined above are contained in Nalco Bulletin 55. Write for your copy today — or ask your Nalco Representative for answers to your problems.

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6213 West 66th Place • Chicago 38, Illinois
Canadian inquiries should be addressed to Alchem Limited, Burlington, Ontario

THE nalco SYSTEM • Serving the Paper Industry through Practical Applied Science



WEST VIRGINIA PULP AND PAPER COMPANY, Mechanicville, New York, is an extremely modern mill noted for its high tonnage production of a wide range of papers. The suction first press of this Fourdrinier making book papers is clothed with an Albany Felt, as are other press positions in this six-machine mill. Dana B. Westcott (right) is Mill Superintendent.

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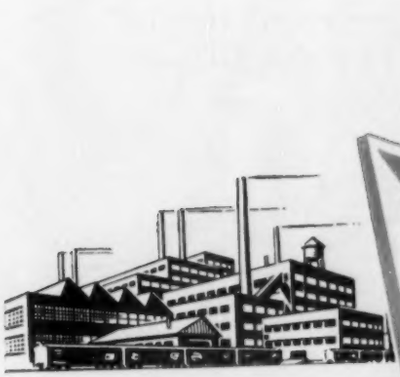
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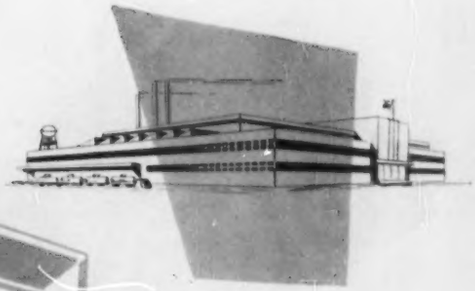
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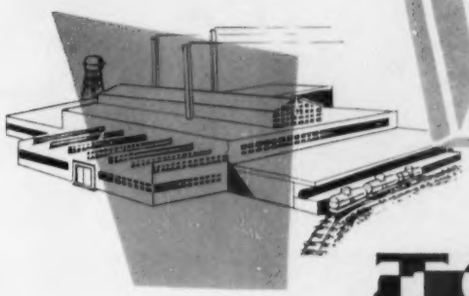
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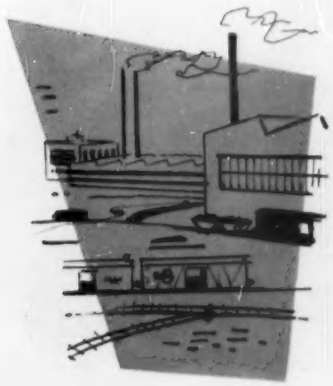
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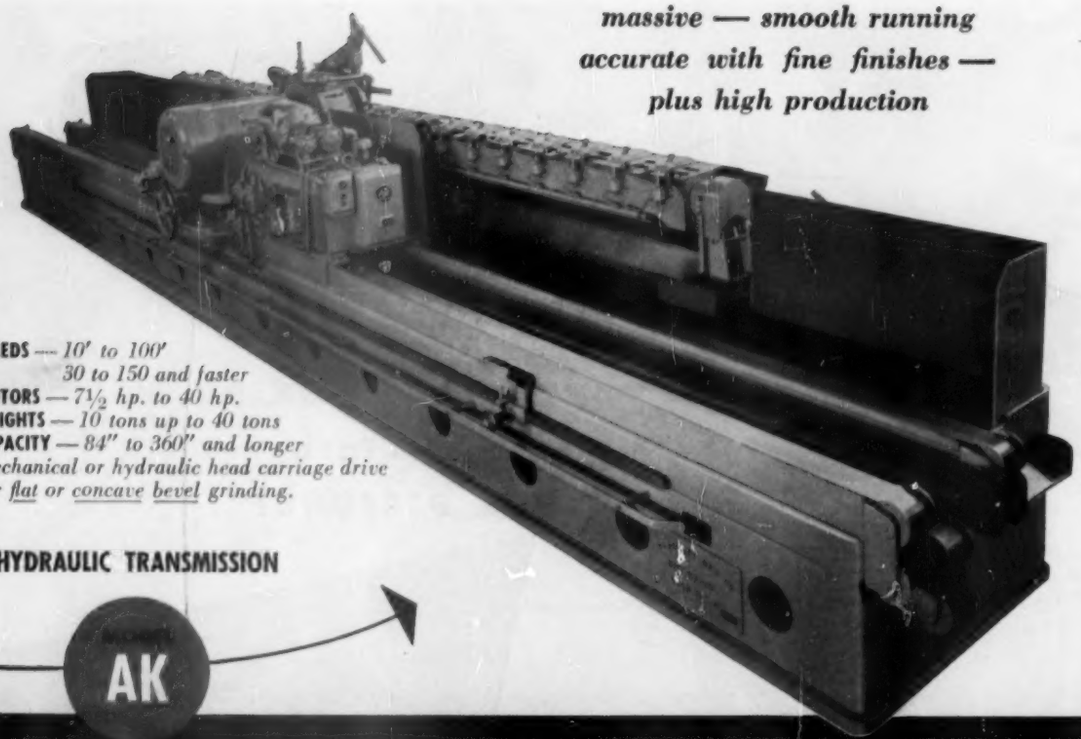
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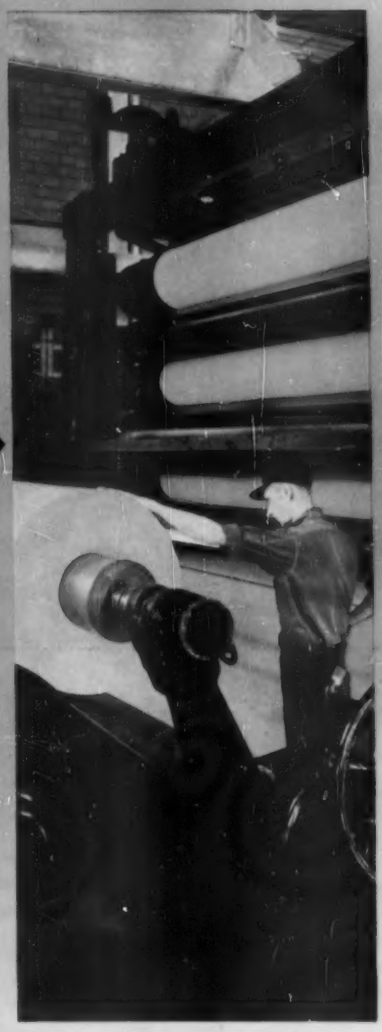
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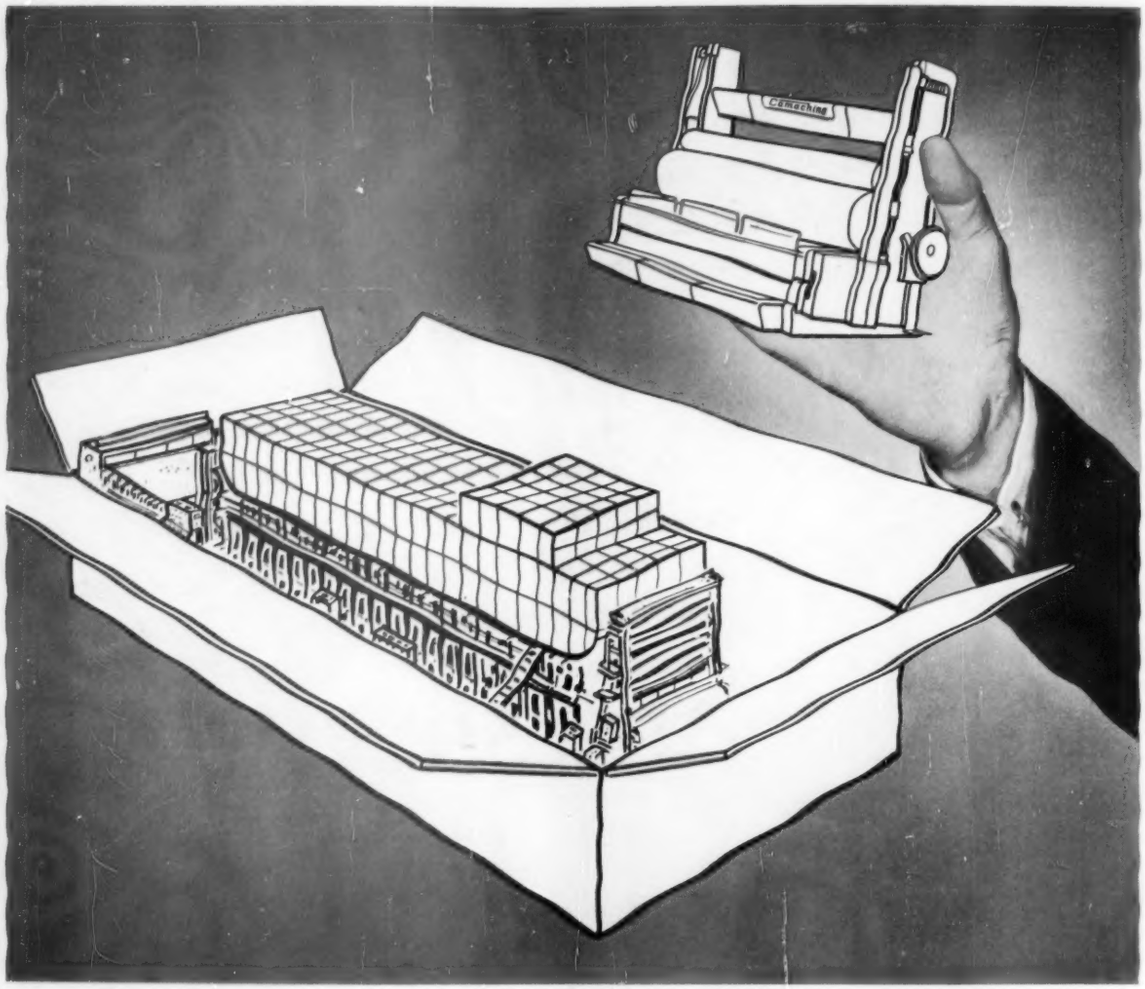
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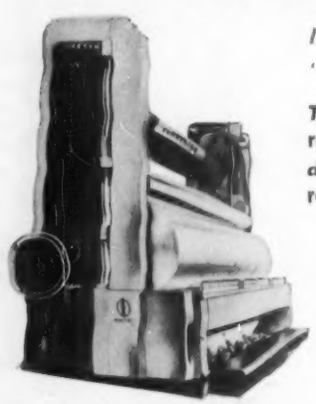
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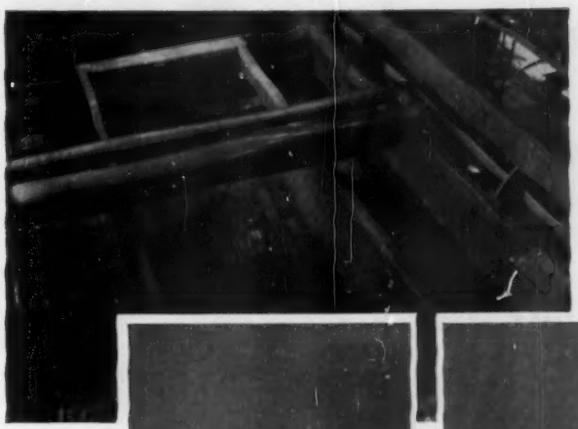
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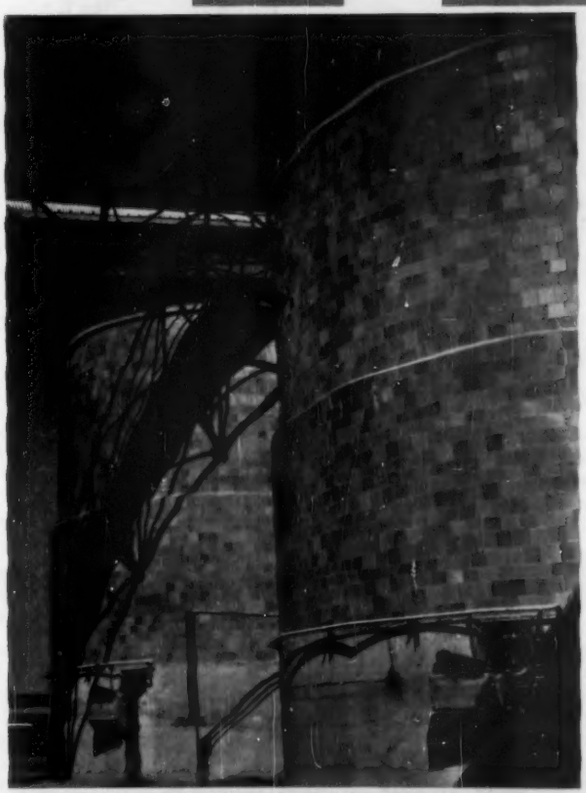
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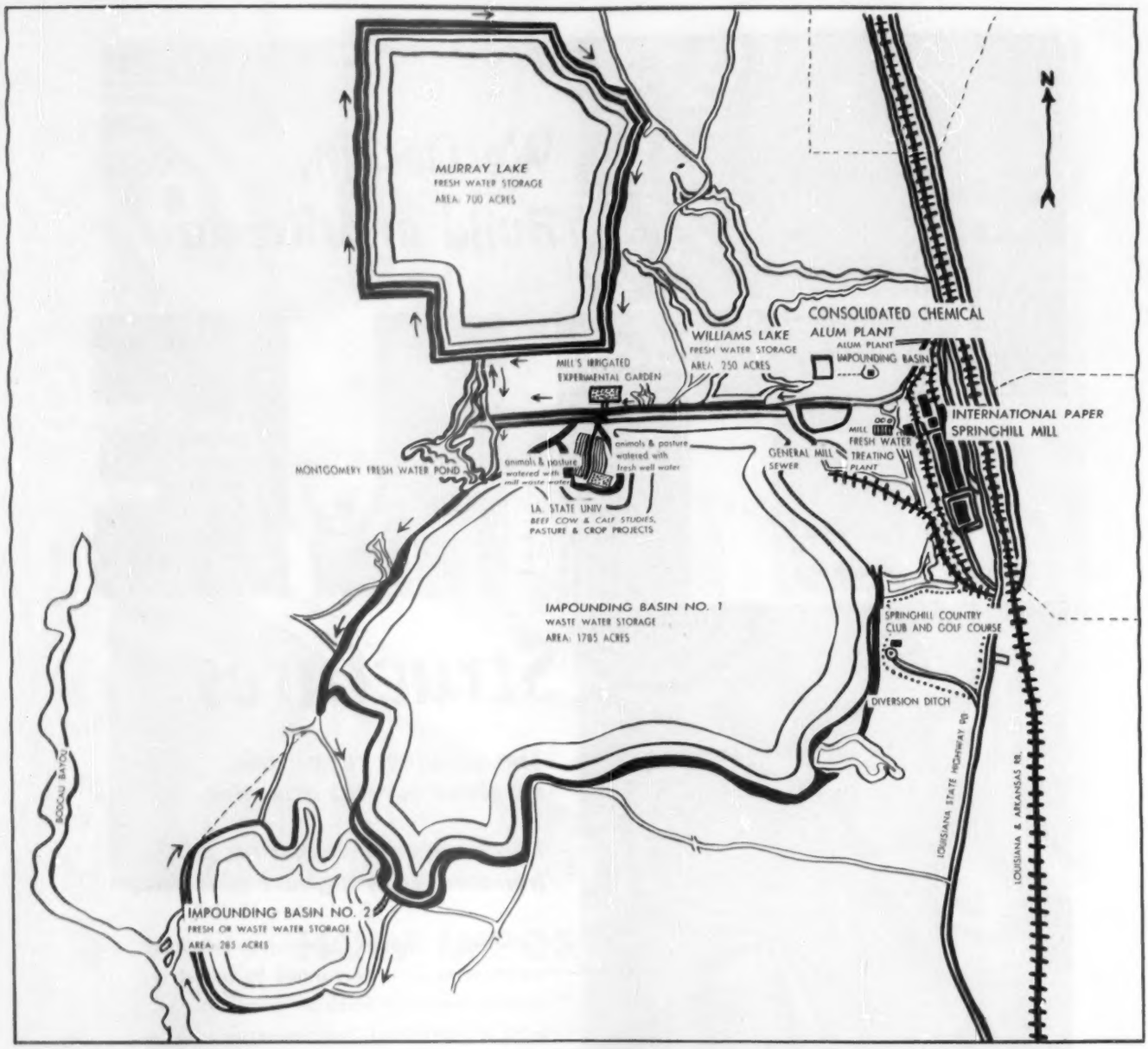
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BIGGEST IMPOUNDING BASIN IN THE WORLD FOR THIRD BIGGEST MILL

HERE'S SPRINGHILL, LA., fresh and waste water system. At top, large Murray Lake (700 acres)—for fresh water. To its right—small Williams Lake (250 acres)—for mill water supply. Extreme right—I. P. Pulp and Paper Mill, Bleach Plant, Consolidated Chemical Alum Plant, small basin for lime sludge, Springhill Country Club and rr. and highway. The largest basin in middle—IMPOUNDING BASIN NO. 1 (1,785 acres). Between this and fresh water lakes at top are University farms and company gardens. At lower left—IMPOUNDING BASIN NO. 2. Waste water is cascaded under control into this basin, and from here to BODCAU BAYOU, the winding waterway at extreme lower left, in fall and winter. Half the year BASIN NO. 2 is fresh—here a great experiment in phenomenal growth of fish.

(Arrows indicate route of tour)

Mill Waste Grows Cows

THERE WERE NO "boys sent to do man's work" when International Paper Co. tackled one of the most baffling waste disposal problems faced by this industry at its big Springhill, La., pulp and paper mills.

This was demonstrated in many ways when a PULP & PAPER editor recently toured its big Louisiana operation west of Shreveport.

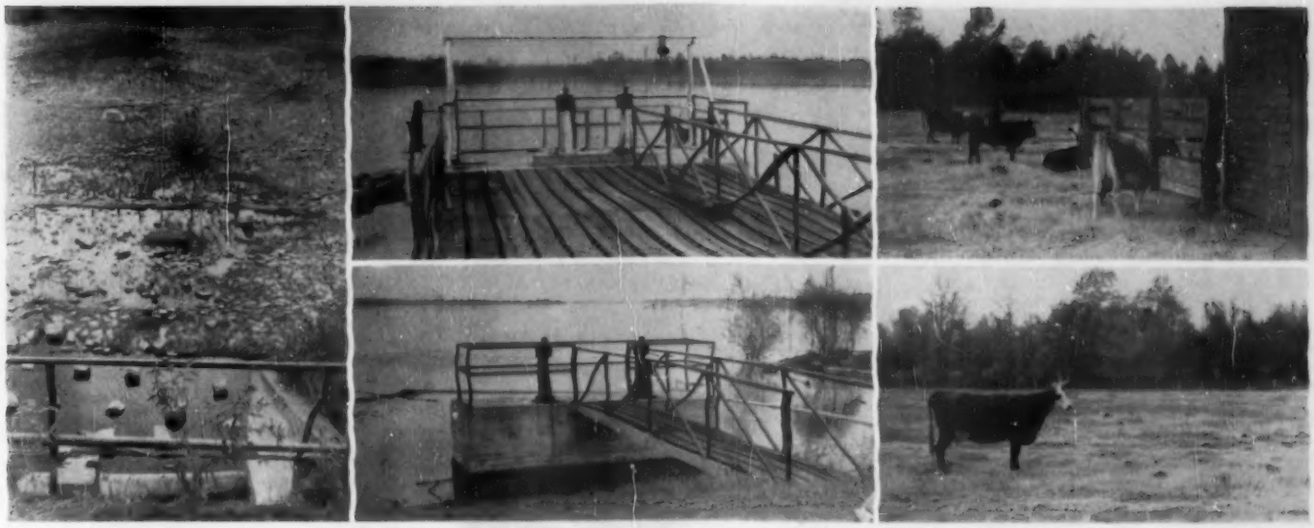
How I. P. solved this problem is a story which reveals no small measure of courage and also a sharp awareness of the touchstones to good community relations. I. P. solved it in a really big way—in fact, it built at Springhill the biggest lagooning system for waste liquor that this industry has ever seen anywhere in the world.

The outlay for dikes, pumps, motors, gates, piping, a huge concrete transfer ditch, and for personnel that is continually observing, checking and testing, as well as operating the system, was correspondingly high. Considering that this is an industry with invested capital which already is higher than almost any other in relation to sales and number of employes, this added *non-productive* investment is even more significant.

This system serves the third biggest mill in the world, making 1,300 tons a day of various bleached and unbleached kraft grades. But unlike the only two mills that are bigger—Savannah, Ga. (Union Bag), and Georgetown, S.C. (also I.P.) Springhill does *not* have the benefit of being on tidal water.

Cattle and Crops Thrive on Liquor

There was a measure of daring involved, too. For I. P. decided to gamble on raising cattle and corn, peas and cotton, with its



DOING IT JUST NATURALLY! THAT'S AT SPRINGHILL

CASCADING OF SPRINGHILL waste water is done *over these rocks (picture at left) in passing the water from Basin No. 1 to Basin No. 2. It is all done naturally—no chemicals are used. Middle views—these show gates and equipment between ponds at Springhill impounding basins. Also indicates vast extents of water as seen in No. 1 pond. Right views—Louisiana State University grows these cows with black water from Springhill mill—they drink it 100 percent and are just as healthy as cows raised on fresh water; cows and calves are neither better nor worse than cattle raised on fresh water.*

and High Corn

black liquor, and called in a qualified and unbiased judge to conduct many tests and experiments—Louisiana State University, through its agriculture experts. Many have seen the extensive pastures and gardens and farms alongside the big disposal pond and know the story—cows and calves raised 100 percent on black water have done *exactly* as well as those raised with 100 percent fresh water.

This fall a third crop of healthy calves reached the age of six months, raised on water from the No. 1 impounding basin of 1,785 acres area, and were to be sold. There is generally 60 percent B.O.D. within this huge basin. Using this water, the corn crop yielded 158.7 bushels per acre. The State University did the irrigating. Springhill Country Club golf greens have thrived on it.

A lower No. 2 impounding basin of 285 acres area stores fresh water from April to October; then mill effluent from October to April. It is through this basin by way of stop-log weirs and gates that the waste water is discharged once a year into Bodcau Bayou from No. 1 basin, commencing in the late fall and continuing until some time in February or March.

Waste water impounded in the upper basin is aerated by passing over cascades of rocks into the lower basin. No chemicals are added at any time for treatment of the waste—it is entirely a natural system. It is simply a strictly controlled system of dilution and conditioning of mill effluent.

Fish Thrive in Pond No. 2

There is a good crop of bacteria growing in the lower basin all the time—even when it holds fresh water. Vast numbers of fish, game and commercial fish, are grown in this basin during its fresh water period and turned back into Bodcau Bayou at its end. In that 6 months, bass grow to an average weight of one lb. Fish were so thick and heavy they twice broke down a wire barrier at the outlet before it was discovered what was the cause.

It is interesting that impounding has improved some bad disease-breeding swamp areas.

Dr. Percy Viosca, Jr., a consulting research biologist of New Orleans, who has served the state and federal governments as well as industries on fisheries problems, declares that the periodic recycling of this lower basin actually "rejuvenates the basin annually."

"Conditions are much more favorable," he declared, "for rapid production of desirable fishes than those existing in natural waters, or those which developed in most unmanaged impoundments after a few years.

"I have eaten many of these fish and can rate their quality superior to most wild fish."

These statements by Dr. Viosca were based on studying the growth of fish in three summers—1949 to 1951—and published by the American Fisheries Society (*Transactions, Vol. 82 - 1952*). He reported large mouth bass young of the year grew to sizes up to 24.5 oz. in the retention period; spotted bass grew rapidly but not as much; black crappie grew to 12 oz. in a 6-½ month period. Some 30 species of fish were found, many in abundant quantities including various bass, perch, shad, suckers, bluegill, minnow, sunfish, carp, shiner and crappie. He said the black-water storage period prevents growth of submerged bulky plants by keeping out sunlight. This is a favorable condition, he explained, because:

"Mineralized material remains in pits and mud when black water is drained off during the winter. Bacteria and phytoplankton develop rapidly and form basic food for protozoans, midges and minute animals. The fry from some 30 species of fishes pumped through the screens have abundant food and choice. Predators can



S. R. WILLIAMSON, Tech. Director of Springhill Mill of International Paper Co.



THEY KNOW PONDS AND FISH

PERCY VIOSCA, JR., (left), Biologist and Consultant of New Orleans, who has served federal, state and private interests, reports phenomenal fish growth in Springhill's No. 2 Impounding Basin during fresh water period.
HARLAN D. SHOPE (right), Waste Disposal Coordinator for all nine Southern Kraft Div. mills of International Paper, with headquarters in Mobile, Ala. He is U. of Arkansas graduate.

shift early to a fish diet and phenomenal growth results."

His paper concluded with this statement: "We may be on the eve of producing predatory pond fishes economically as a harvestable crop."

Careful Records Show No Fish Kill

In this Louisiana area it has been a long time since any intelligent audience would lend an ear to the fantastic charges that used to be heard—that black liquor was to blame for sterile bulls, cows losing calves, milk turning brown and trees dying. Acceptable to the State of Louisiana are the measures taken at Springhill, and such careful checking has been made that there have been no fish kills at least since 1948, if there ever were before then, that could be blamed on mill effluent.

Great care is exerted in controlling discharges to the bayou, which sometimes drops to as much as seven feet below flowing stage. There is a dam on the bayou but this is used only for flood control.

The success of the Springhill operation is indicated by the fact that three times as much effluent is now being stored as was the case when the ponding system was started in June 1938. There is increased storage and accelerated discharge, but it is done in complete safety to the fish.

Two Lakes Above Basins No. 1 and No. 2

Above the impounding basins are two fresh water lakes—Murray Lake, with fresh water storage area of 700 acres, and Williams Lake, with 250 acres storage, each independently connected with the basins. Williams Lake, with capacity for 120,000,000 cu. ft., supplies the mill. The Springhill mill has a water treatment plant of 32,400,000 gals. per day capacity, 60 percent from surface sources and the rest from wells. Some of the mill surface supply comes from the lower impounding basin during the half year it holds fresh water.

A large concrete ditch carries surface water pumped from Bodcau Bayou during high water season to Williams Lake and Murray Lake for additional water storage for dry periods.

More About the Experiments

The Louisiana State University beef cow experimental area and crop and pasture are carried out between the lakes and the No. 1 pond. Cows in one pasture drink only paper mill waste water. Cows across a road drink only fresh well water. In the spraying of pastures, also, waste water only is used on one side, fresh on the other. It is established the cows and calves are neither better nor worse in any respect, one side vs. the other.

The mill's own gardens in this area also have demonstrated that use of waste water does no harm to soil or crop.

University farm crop and pasture experiments also are conducted here with waste water irrigation, well water irrigation and without water.

The upper impounding Basin No. 1 has a capacity of 1,210,000,000 cu. ft. and maximum depth of 40 ft. The Lower Basin No. 2 has capacity of 185,000,000 cu. ft. It has never been necessary to dredge or remove any waste substance in either basin as long as they have been used.

A by-product of lime recovery in the pulp mill is a calcium carbonate sludge which is used for liming of soils for farming and gardening.

On testimony of several persons questioned by PULP & PAPER in the area, the fishing is good in Bodcau Bayou and the fish taste good.



FOUR I. P. MILL MANAGERS TRADE NOTES

IT ISN'T OFTEN four International Paper Co. Mill Managers are in one single camera's eye, but it happened at Shreveport, La., Community Relations meeting sponsored by APPA. left to right: ALBERT G. ROZYSKIE, Manager at Camden, Ark., since 1939; JOE PATE, Manager of "Louisiana" Mill at Bastrop; JACK LEYDEN, Manager of Natchez, Miss. (dissolving pulp); and HARRY ROGERS, Manager of Bastrop Division at Bastrop, La. Senior manager of group is Mr. Royskie, who started at old Cherry River, West Va., mill, then at Muskegon, Mich., and Detroit Sulfite before going to Bastrop in 1923. M. Leyden was born in West Va., his father worked at Cherry River, and he worked in Glens Falls, N.Y. Mr. Pate, a native of Mississippi, is a veteran of Southern mills, including the old Bogalusa pioneer mill. Mr. Rogers, native of Atlanta was raised in Florida and graduated from the U. of Fla.



MADE VISITORS WELCOME

OTHERS ON THE STAFF at International Paper's Springhill, La., mill who made guests and visitors welcome there included CHARLES RILEY (left), Supt. of the Container Division at Springhill, and J. B. SHAW (right), Personnel Director for this big mill.

"Raise the Curtain"— Advises Erling Riis

What has been done at Springhill by I. P. is an elaborate and effective demonstration of the recent recommendation made by Erling Riis, Norway-born vice president and general manager of its Southern Kraft Division: "In the development of good community relations, our job is not to harangue our neighbors—but instead to share our experiences to make it possible for them to see what we see. All we can do is to raise the curtain."

Of all the top officials of Southern Kraft Division, I. Y. (Ike) East, now Coordinator of Pulp Mills for the Division, has —understandably—perhaps greatest personal pride and intimate interest in what has been achieved at Springhill. After all, the whole project was his "baby" and was developed in the years when he was manager there.

"These waste problems we had to face at Springhill brought home to us the importance of the right kind of community relations," he told PULP & PAPER.

Shope is Waste Coordinator

Another man close to this development and directly in charge of many of its phases is Harlan D. Shope, who is waste disposal coordinator for all nine Southern Kraft mills and a graduate of the University of Arkansas.

Col. Eddie Y. Argo, special representative for I. P. in the Shreveport region, including Springhill, likewise has been very close to the problem and a big part of his job has been to assist in carrying out the very idea of "sharing our experiences with neighbors" which Mr. Riis enunciated.

And, of course, the key Springhill staff is in daily contact with the problem and the project. Included are Frank Mixson, mill manager, who is a University of Alabama product and a veteran of I. P.; S. R. Williamson, technical director; G. C. Brodnax and others of the mill staff; and John T. Peninger, the agent at Springhill for I. P.

Pyburn and Odom, consulting engineers of Baton Rouge, La., were consultants for the project.





HOSTS AND GUESTS THESE WERE—AT SPRINGHILL MILL AND SHREVEPORT MEETING

PARTICIPANTS IN COMMUNITY RELATIONS meeting at Shreveport, La., and in tour of big lagooning layout at Springhill Mill (l to r): I. Y. (IKE) EAST, Coordinator of Pulp Mills for Southern Kraft Division of I.P., keynoted Community Relations meeting and proudly showed guests the waste liquor impounding which he developed while Manager at Springhill; DON ROCHESTER, Secretary of APPA Community Relations Committee, and PHIL A. BACHELDER, Secretary and Asst. Treasurer of Coosa River (Ala.) Newsprint Co., who reported on Atlanta meeting.

TWO MORE HOSTS AT SPRINGHILL and their guests (l to r): JOHN T. PENINGER, Agent for I. P. co. at its Springhill, La., mill; W. R. CRUTE, Vice Pres. and Division Mgr. for Champion Paper & Fibre Co. at Houston, Tex.; COLONEL EDDIE Y. ARGO, Manager of Shreveport, La., Office of International Paper Co., who was Chairman of Arrangements for meeting there and tour of Springhill mill and impounding operations; and A. M. (MIKE) KOURY, Southern-born Industrial Relations Manager of the big pulp and paper mill of Champion near Houston.

APPA, NPA Merge Community Projects

THE NATIONAL PAPERBOARD ASSOCIATION and the American Paper and Pulp Association are going to join forces in a single industry-wide community relations organization and program.

This was biggest news that came out of the launching of a new Southwestern regional community relations organization in the first meeting of the kind ever held in that region at Shreveport, La., Nov. 17.

On the other side of the ledger was disappointment that five Louisiana and Texas mills failed to send any delegates to the APPA-sponsored meeting, although they had been invited. These are five established mills which have long been in operation.

International Paper Co. turned out strong, sending 25 delegates out of the 44 delegates and guests who were registered. They represented various I. P. operations in Louisiana, Mississippi and Arkansas. Champion, Gaylord, Southland, Crossett, Johns-Manville and Masonite were other companies represented from the region, which also includes Texas.

I. Y. (Ike) East, coordinator of pulp mills for International Paper in the South, chairmanned the meeting and a proposal to organize was accepted after a full day of discussions of the problem and techniques for dealing with it. A nominating committee named by Mr. East was to form a steering committee for the region. The former includes:

Frank Heyward Jr., public relations director, Gaylord Container Corp. (chairman); W. R. Crute, vice president and Texas manager for Champion; William C. Norman, vice president of The Crossett Companies; Col. Eddie Y. Argo, Shreveport, La., office manager for International Paper, and A. B. Marchant, manager of the Johns-Manville mill at Natchez, Miss.

Special guests included Phil A. Bachelder, secretary and assistant treasurer of Coosa River Newsprint Co., who reported on the meeting held a few weeks earlier for the Southeast mills in Atlanta (see PULP & PAPER, Dec. issue, page 58). Also Howard W. Allen, vice president and director of public relations for all Johns-Manville operations, flew in from New York for the meeting.

Joint Effort with Paperboard Assn.

The assurance that National Paperboard Association would join the APPA in coordinating their two programs on community relations work came out of a meeting Nov. 7 in New York where Dwight Thomson, Champion vice president, and chairman of the APPA community relations committee, appeared before the NPA board of directors.

The purpose of cooperation will be to avoid duplicating committees and projects and is expected to lead to the setting up of one single national committee. However, the program will still be a "grass roots" one, carried out at mill levels according to each mill's needs and ideas. But APPA and NPA will conduct regional and national "workshops" for development and exchange of ideas.

This is one of the first tangible results of recent overtures by President Marvin W. Swaim (Alton Box Board) of NPA and President Sydney Ferguson (Mead) of APPA for closer cooperation between the two groups.

Mr. East read an address prepared by

How It All Started: Score an Assist for Senator Byrd!

Score a great big assist for Senator Byrd, Virginia's famous Democratic solon, for the launching of the U. S. pulp and paper industry's community relations program which now has virtually encompassed all the mills in the country.

At a dinner with a number of pulp and paper industry leaders in Washington over two years ago, Sen. Byrd said:

"The Senate and the Congress are sympathetic with your industry's objectives, but, gentlemen, I would hazard a guess that *less than one percent* of the people in your mills or your wood suppliers know the objectives of the pulp and paper industry."

Then and there, the idea for the APPA program was born and the nationwide program got under way, modeled after the "workshops" which were already so successful in the Wisconsin segment of the industry. Several other inudustries today are watching this unusual program.





APPA AND NPA GET TOGETHER

MARVIN W. SWAIM (left), re-elected President of National Paperboard Assn. at its fall meeting in New York, and DWIGHT J. THOMSON, Chairman of APPA's National Community Relations Committee, were key figures in the moves by which NPA and APPA agreed to coordinate their community relations programs, to avoid duplications and strengthen the program. MR. SWAIM is First Vice Pres. of Alton Box Board Co.; MR. THOMSON, Vice Pres. in charge of community and employe relations for Champion.

Erling Riis, vice president and general manager of Southern operations for International Paper Co., who was unable to attend. He said:

"Our communities in the South are complex and dynamic. The problem is one of great breadth. Our community relations have been neglected."

He urged sincerity and recognition of diverse viewpoints. Also constant communication with communities—"not just when we need their help."

Mr. Bachelder, who came to the South for Coosa River from his native Maine via Neenah, Wis., said the 6-state Atlanta meeting, which 300 attended, made that regional group "a going concern." It convinced him "the group approach" was correct, because he came there with a problem of his own—whether to use purchased newspaper space instead of a house organ for reaching the community—and he got help from others.

With a Washington-Oregon organization meeting next on schedule, Don Rochester, secretary of the APPA national committee, said about 99 percent of the mills in the country will have been "covered," leaving only a few in Illinois and Indiana which were not numerous enough for a group. First groups organized with officers, charter and by-laws are Wisconsin and the Southeast.

In his tour of nearly 100 mills, Mr. Rochester found many big and medium size mills had expanded so rapidly they lost touch with communities, and many small ones needed help in impressing on their communities the economic importance of the industry. He outlined about 25 different media for communication—



STUDY COMMUNITY PROGRAMS

PARTICIPATING in Shreveport Community Relations meeting were (l to r): HENRY A. MAAS JR., Personnel Director at Southland Paper Mills; RODNEY V. BEMUS, also of Southland staff, and J. S. McINVALE, Public Relations Director for Masonite Corp., Laurel, Miss. Mr. Maas is son of Southland's Wood Procurement Mgr. of same name.



OTHERS AT SHREVEPORT MEETING

IN HUDDLES AT SHREVEPORT WERE (l to r): FRANK HEYWARD JR., Public Relations Director for Gaylord Container, Bogalusa, La., who heads committee to form steering group for Southwest; ARTHUR G. ROOT, Personnel Dept., Gaylord; WILLIAM C. NORMAN, Vice Pres. of The Crossett Companies; JAMES C. HAIR, Paper Division Mgr. for Crossett, and GUS G. BIENVENU, Supt. of Container and Bag Division at Gaylord.



HOWARD W. ALLEN, Vice Pres. and Director of Pub. Relations, Johns-Manville Sales Corp., and Dir. of Pub. Relations, Johns Manville Corp., attended Shreveport meeting. He is former newspaper columnist at Anderson, Ind., and is Pres. of Sons of Indiana in N.Y.C.

from tours, bulletin boards and gifts to radio programs, clubs, movies, etc.

Discussion brought out these ideas:

An informative magazine was credited with completely reversing a Wisconsin town's attitude toward a mill—for the better.

A pensioners' club in a Pacific Coast company develops hobbies for them.

Hammermill's human relations course for foremen given by a U. of Michigan professor.

Turning over publication of company magazine to a union local; also the sponsoring by the local of recreational associations and field days.

Rhinelander Paper's exchange vists of their foremen with those of customers such as Swift's, General Foods, etc. (This being broader than community advertising, of course).

The elaborate outdoor Christmas displays originated by Joe Pate, International's "Louisiana Mill" manager at Bastrop, La. Since 1945, they have brought such big crowds that traffic cops were required.

Crossett Companies, Crossett, Ark., brings to town vaudeville acts at Christmas time, gives 2,000 presents to children —one party for white kids, the other for colored.

Non-denominational prayer meetings once a week in Crossett's Employe Facilities Bldg. Employes asked for this—bought their own songbooks and piano. Leaders are rotated among denominations.

Representative Pulp and Paper Companies - Nine Months Sales and Earnings for 1953

	Net Sales (000)	Income Bef. Taxes (000)	% Of Sales	Net Income (000)	Net Per Share
Puget Sound Pulp and Timber Co.	$ 15,464	$ 4,665	30.2	$ 2,055	$ 2.64
Rayonier Inc.	55,959	16,223	29.0	8,154	3.63
Diamond Match Co.	74,852	4,679	6.3	2,719	1.97
Eastern Corp.	15,521	1,160	7.5	599	1.59
Great Northern Paper Co.	32,989	6,888	21.9	3,437	3.44
Champion Paper & Fibre Co. (fiscal yr. 3/31)-(4th,1st.& 2nd Qu.)	97,006	14,811	15.3	7,274	3.15
International Paper Co.	506,537	109,454	21.6	42,976	4.75
Mead Corp.	85,618	9,657	11.3	3,885	3.22
St. Regis Paper Co.	148,549	NA	-	10,150	1.82
Scott Paper Co.	121,092	21,467	17.7	8,533	2.72
Container Corp. of Amer.	141,574	21,543	15.2	7,589	3.69
Gair (Robert) Co., Inc.	88,649	12,342	13.9	4,622	2.12
Gaylord Container Corp.	67,964	11,874	17.5	5,654	2.10
National Container Corp.	46,964	6,166	13.1	2,873	0.86
Sutherland Paper Co.	42,978	7,149	16.6	2,272	2.51
Union Bag & Paper Co.	78,068	16,106	20.6	7,612	4.30
Glatfelter (P.H.) Co.	12,199	2,410	19.8	756	3.29
Hammermill Paper Co.	21,363	1,861	8.7	954	1.10
Oxford Paper Co.	40,220	5,068	12.6	2,012	2.14
Riegel Paper Corp.	31,877	2,503	7.9	1,178	2.24

What 20 Firms Did in Nine Months of 1953

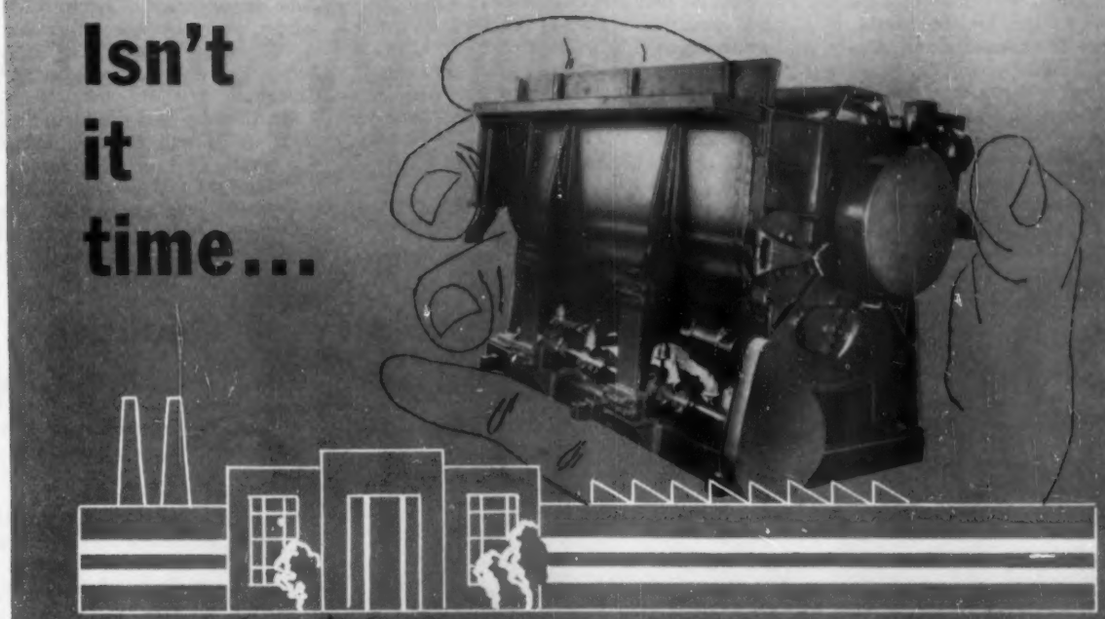
SALES AND EARNINGS reports for nine months of 1953 for 20 representative companies of this industry are shown here. This table was especially prepared for PULP & PAPER by Cyrus J. Lawrence & Sons, members New York Stock Exchange, from statistical services and published reports. While the figures are believed to be correct, no guarantee is given as to their accuracy.

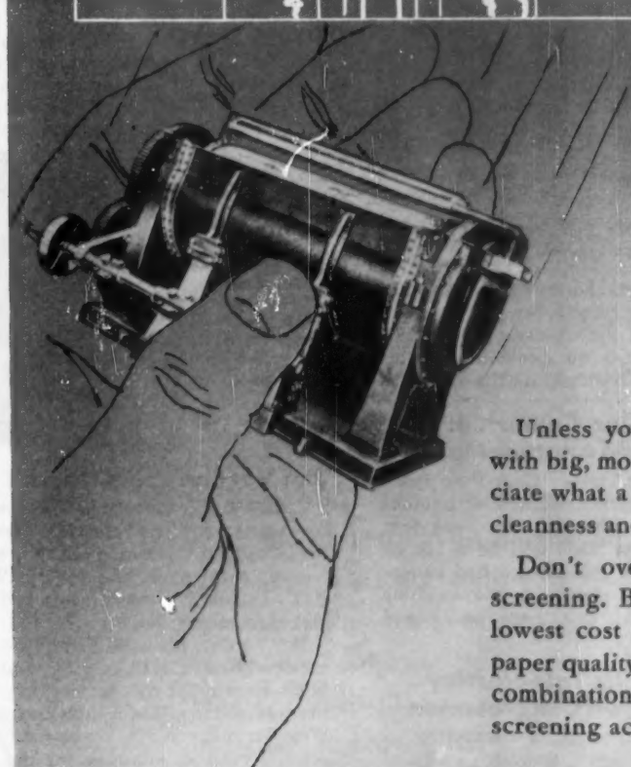
An attempt was made to select representative companies in each of the major production fields. The first two are market pulp producers. Next come three Northern integrated operations. Then a group of four companies which operate in both North and South and are integrated. Six integrated paperboard producers are next. Finally, other integrated companies identified with the North, although Riegel has a pulp mill in the South.

Erspamer Joins H & W

A. S. Erspamer has joined Hollingsworth & Whitney Co., Waterville, Me., as assistant to manager of the Northern mills, having resigned as assistant resident manager of St. Helens Pulp & Paper Co., St. Helens, Ore., after that company was acquired by Crown Z. Prior to going with St. Helens a year ago he was technical director of P. H. Glatfelter Co., Spring Grove, Pa.

Isn't it time...





you changed your SCREENS?

Unless your paper machine is already equipped with big, modern Bird Screens you just cannot appreciate what a whale of a difference they make in the cleanness and uniformity of the sheet.

Don't overlook the importance of up-to-date screening. Bird Screens are still the most efficient, lowest cost means of meeting today's standards of paper quality — new Bird Screens that have the right combination of capacity, screen slot width and gentle screening action.

BIRD MACHINE COMPANY

SOUTH WALPOLE. • MASSACHUSETTS

Japanese Say Russians Offer A Deal

Spokesman for a Japanese delegation which arrived in the United States in early December to expedite a new Alaska woodpulp and lumber operation to serve Japan, told PULP & PAPER that they have been offered lumber by Russia on a barter basis.

He said the Japanese do not want Russian products if they can get them elsewhere. They consider the Russian offer as a peace overture.

Another Japanese technical mission will be sent to Alaska in 1954 to make a final report on site, processes, etc. This delegation comprises officers of Alaska Pulp Co., which reportedly oversubscribed $4,500,000 to invest with American majority capital in mills planned for Sitka, Alaska. They said rayon manufacturers are among stockholders.

The group: T. Sasayama, board chairman; J. Kobayashi, president; Miss A. Kobayashi, secretary to her father; T. Oshima, executive director; Y. Niki, financial managing director, and M. Sadayasu, interpreter and official.

Negotiates For New Mill on Vancouver Island

A new $40,000,000 kraft mill for British Columbia, scene of spectacular expansion during the past few years, is likely to be built near Victoria, on Vancouver Island, according to R. E. Sommers, minister of lands and forests.

Mr. Sommers says that he discussed plans with the sponsors in eastern Canada and will negotiate with them in January. They already hold timber on Vancouver Island.

Swedish Expert Sees Big World Pulp Demand

World demand for paper and pulp will increase heavily during the next few years, if peaceful progress is not interrupted, says Prof. K. T. Streyffert, head of the Institute of Forestry in Stockholm. He has been in charge of a large-scale investigation into the problem under auspices of the UN Food and Agriculture Organization in Rome.

Prof. Streyffert said pulp-producting countries in Europe can count on a widening of their export markets, especially in South America, where cultural and industrial expansion is increasing demand.



ARTHUR F. MOESLEIN, new Division Sales Chief in Central and Southern States for Anheuser-Busch paper industry starch and other products.

For Anheuser-Busch In South and Central States

Tate M. Robertson, Jr., sales manager of the Corn Products Department of Anheuser-Busch, Inc., St. Louis, manufacturer of starches, dextrines, and corn syrups, announces appointment of Arthur F. Moeslein to division sales manager of the Central and Southern States territory.

Mr. Moeslein has been with Anheuser-Busch for 18 years, and in his new capacity will devote much time to the paper industry. His staff will include qualified technical personnel whose services are available without obligation.

Hanway of International Looks to Future

A significant change in this industry has been development of strong working capital by many leading companies, William A. Hanway, secretary of International Paper Co., told an investment group in Chicago.

Mr. Hanway said productive capacity of U. S. mills will increase another three percent in 1954, after going up six percent in 1953. Therefore, he said, it behooves the pulp and paper companies to keep themselves in strong shape to counter the effects of possible "digestive problems" in 1954-55.

Colloidal Glues Boost Paper Qualities

MANY PLACES where colloidal properties of glues are being used in paper mill production were outlined by Chelsey S. Young,



C. S. Young of Swift's Adhesives Dept., who spoke to recent Chicago meeting of Tappi.

who is in charge of sales of formulated adhesives, Adhesives Products Dept., Swift & Co., at a recent meeting of the Chicago section of Tappi.

Swift is now making an extensive line of synthetic resin adhesive products for the paper industry and Mr. Young's appearance before the Chicago group came only shortly after his promotion to his present position from technical service. He serves under Ed R. Paul, manager of the Adhesive Products Dept., Swift & Co. Graduate of Colorado School of Mines and M.I.T., Mr. Young has been with Swift 20 years.

Ed Berg, Ace Carton Corp., section chairman, presided. Dr. Edward Higbee, a consultant, discussed uses of latices in adhesives. Robert Pratt, National Starch, stressed packaging and converting adhesives uses.

As final speaker, Mr. Young also covered primary paper manufacture uses, the value of glues for creping of tissue, as aids in flotation saveall systems, and in the finishing and treating of papers.

Weyerhaeuser Timber Co. Decides to Add Another Machine

Weyerhaeuser Timber Co.'s Pulp Division is planning the addition of another paperboard machine at its Longview, Wash., operations. This will be a 148 in. machine and will run unbleached paperboard essentially similar to the machine in its Springfield, Ore., pulp and board mill.

APPA Urges Its Taft-Hartley Ideas be Shown Congressmen

The industrial relations committee of the APPA has made a thorough study of the Taft-Hartley law and suggested proposals for amendments. All aim to strengthen individual rights, protect public interest, improve administration and establish a balance of rights and duties and responsibilities between labor and management.

Proposals deal with secondary boycotts, restricted voting on union shops, various types of strikes, appointments to inquiry boards, extension of injunctions, etc.

The APPA recommends it be brought to attention of senators and representatives.



JIM VERDON — new Sales Representative in Midwest for F. C. Huyck & Sons. His home is 2415 Law St., Kalamazoo, Mich. He is widely known in Midwest mills.

Jim Verdon Joins Huyck

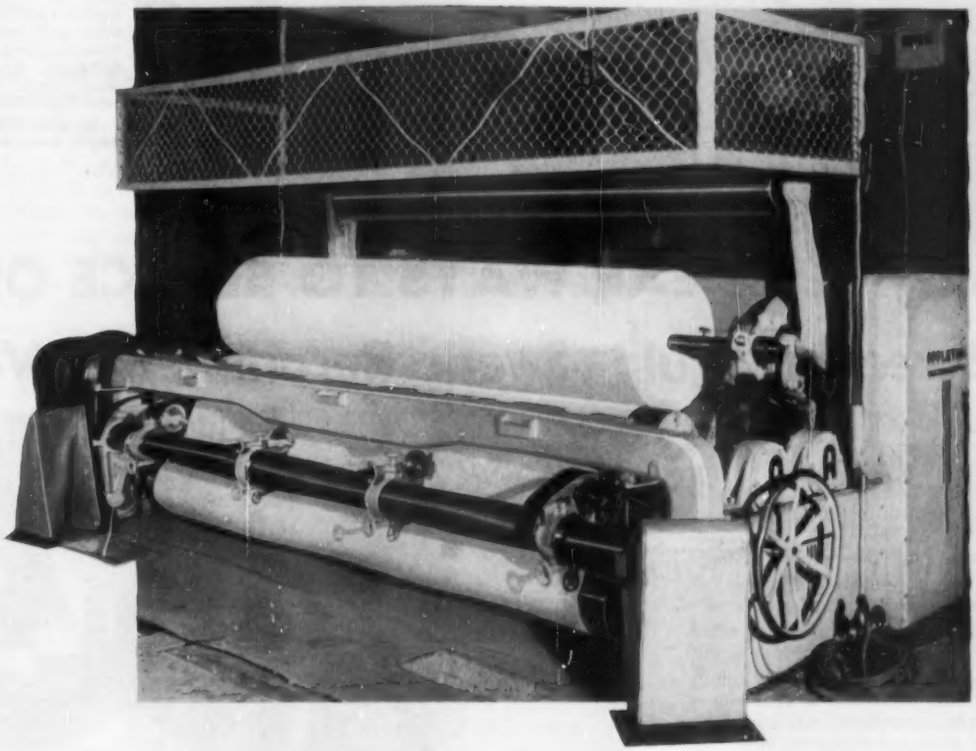
James R. Verdon, sales representative for many years in the Middle West states for American Cyanamid Co., has accepted a position to cover the Middle West for F. C. Huyck & Sons in sales and service of papermakers' felts.

Mr. Verdon, his wife, Virginia, and their children live at 2415 Law St., Kalamazoo, Mich. Except for war service, Mr. Verdon has traveled to mills throughout the Middle West for many years. He and his brother, John, served as salesmen for the American Cyanamid Paper Makers Chemicals manufacturing plant which is in Kalamazoo, which their father "Ren" Verdon managed for many years and continues to serve as advisor.

Mr. Verdon served throughout the big offensive through France and also in the Battle of the Bulge as an U.S. infantry officer. He was also an infantry reconnaissance officer.

Two other additions announced by Huyck: Albert E. Gedman, from Scott Paper, and Russel A. Jensen, from St. Marys Kraft, as field service engineers.

for over 70 years...



. . . Appleton Machines have been anticipating and filling the needs of the Nation's leading paper makers. Above photograph, taken at the famed Blandin Mills, shows installation of an Appleton 150", 2 drum rewinder. Combining efficiency with stability and proven principles of pioneer design has long been our standard operating procedure.

APPLETON MACHINE COMPANY
APPLETON WISCONSIN

CUSTOM-BUILDERS OF PULP & PAPER MACHINES · WINDERS · FINISHING ROLLS · REWINDERS







ALL THE WAY FROM ITALY TO TEXAS TO TELL ABOUT ODOR CONTROL—AND DIDN'T TALK!

DR. PIETRO GHISONI (left), Technical Director of pulp and paper operations of Cartiera Vita Mayer & Co., Milan, Italy, thought his Lombardy accent would be hard to understand, so—

HE USES A POINTER (top right), while JERROLD H. MOYER, Technical Services Director, Champion Paper & Fibre Co., read the paper for him. But Dr. Ghisoni couldn't resist chiming in when discussions grew lively. And—

CONGRATULATIONS are heaped on him (below right) for giving more ideas about kraft odor control than this industry had heard before in one talk. (L to r): JOHN W. NATWICK, Papermaking Consultant; L. B. (BOB) OWEN, P. H. Glatfelter; ALBERT G. (BUFF) NATWICK, East Texas Pulp & Paper; L. D. McGLOTHLIN, Crown Zellerbach; and RALPH BERGSTROM, Swenson Evaporator Co.

KRAFT MEN HEAR WAYS TO REDUCE ODOR

For Screening Pulp—Swede Recommends Variety

AN ITALIAN, whose mill probably is doing the most complete job in the world of abating kraft odors, and a Swede, who described combinations of multiple screening with different kinds of screens for high quality pulps, were the two biggest "hits" at the annual November performance of the Tappi-sponsored Alkaline Fall Pulping Conference.

Dr. Pietro Ghisoni, technical director, Cartiera Vita Mayer & Co., of Milan, told of reducing odors at his company's mill, located in a narrow valley of the famous Lombard Plain of medieval history. There was nothing medieval about his story, although none of several things his mill is doing is entirely new. The newest is oxidizing of weak black liquor as originally done in Union Corp., South Africa, and by Pacific Coast Weyerhaeuser mills. His paper recalled one given a few years ago by W. O. Hisey of Sandy Hill on the South African process.

Dr. Ghisoni told PULP & PAPER, his company calculates that it has reduced odor by 95 per cent.

Gustaf Ranhagen, project engineer for all mills of the big Swedish Cellulose Co., flew across the ocean on his first such trip to tell about screening combinations, and then he continued on a tour of U.S. mills mostly arranged right there at Houston. He is 37, a graduate of Orebro Technical School, was a mill designer from 1937-40, technical manager from 1940-5 of Hjerpens sulfite mill, then its mill manager till 1950. Since then he has specialized on new projects for all the Swedish Cellulose mills, which are major world market pulp producers and are centered in the Sundsvall area.

More for Engineers than Technicians

There was more in this 7th annual kraft industry confab for the engineers than for technicians, it seemed, as papers on washing and screening equipment dominated. But technical directors were thicker than big brimmed hats in a Houston hotel on Saturday night, and they had their innings a few times, especially when Dr. Johnnie McGovern, pioneer of semi-chemical bleaching techniques from Madison, Wis's U.S. labs, led off a panel discussion on that subject the last day. A "blow-by-blow" report of that session follows this article.



HIS ADDRESS IS OVER—BUT HE STILL HAS AN AUDIENCE

GUSTAF RANHAGEN continues to discuss his principle of multiple screening with different types of screens. (L to r): ELMO MADISON, Minnesota & Ontario Paper Co., MR. RANHAGEN; SIGGE EKMAN, Rhinelander Paper Co., and D. T. ROY, Canadian International Paper Co.

To this historic East Texas neighborhood where the rebel yell was first heard, where Deef Smith deliberately burned the bridge behind a revenge-hungry army, and Sam Houston's forces "remembered" the Alamo with smashing victory and capture of Santa Ana, came 336 delegates. Of this number, 44 wives were registered, nearly all from mill towns. There were 174 mill men in attendance from as far as New Brunswick and British Columbia, and from New England, the Lake States, Washington and Oregon. Peddlers and others totalled 118, and some 30 of these were a day or so late as Gulf rainstorms walled out their planes.

May Go to Jacksonville in 1954

Tennessee-born Fred Bishop, 1937 graduate of Ol 'Miss,' seven years with I.P. at Moss Point and since 1944 with Southland, has been chairman of the sponsoring alkaline pulping committee since last February. He is Southland's chief chemist. Mr. Bishop heads up the program again for next year. For the present it looks like Jacksonville has an inside track to get the 1954 Fall meeting but three other cities also are very much in the running. The subject for 1954—all phases of cooking. The standing committee of 20 is, naturally, dominated by the South. But some Northerners are dissatisfied with only one Northern mill member—J. McK. Limerick, of Bathurst, New Brunswick.

Reduction of Kraft Odors

The Italian mill is in a densely populated area and the valley location intensified its problem.

As most kraft mills are doing, it first burns all non-condensable gases from digester relief and blow of pulp cooking in a natural gas burning boiler. Oxidation of weak liquor before evaporation, using a Bergstrom type throwback oxidation system with a foaming type of oxidizer, was the newest and most interesting of the steps taken here. There is complete oxidation of condensate coming from relief, blowing and evaporation of black liquor, forcing this condensate into the first stage chlorination tower of the bleach plant, where very little added cost in chlorine is required.

Finally, there is oxidation of malodorous sulfur compounds contained in smoke of the boiler burning black liquor, by washing with chlorine water and cooling at dew point, then mixing with non-odor bearing source stack gases and finally mixing with fan blower air at the top of the stack. This final step, tried early in the process, reduced odor units from 350 to 120.

Dr. Ghisoni reported that south winds dissipate the odors but north winds carry them toward populous areas. A new 180 ft. stack is being erected at the top edge of the valley where wind velocity is 10 times that at the bottom.

All the things done in this Lombard mill are done in North America in different mills, but not any single mill over here does them all. Dr. Ghisoni left New York to return to Italy on Nov. 28, a week after the meeting.

Use of Multiple, Diverse Screens

With screening increasingly important in kraft mills due to demands for higher quality and also possible savings in raw material, even the extreme multiple screening ideas presented by the Swedish visitor were of individual interest to some of the North American Kraft mills. After his address, Mr. Ranhagen told PULP & PAPER he had described complex systems used in sulfite mills, but he felt they were becoming more applicable to kraft.

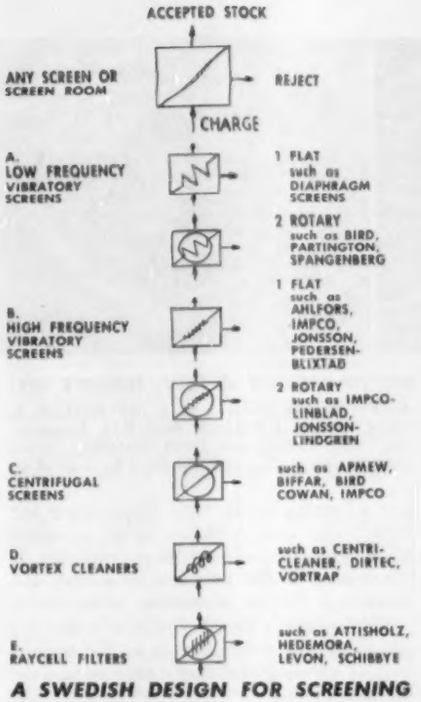
Double screening is common in sulfite mills, but a so-called cascading system as he presented it, is novel and unusual for any division of the industry.

Mr. Ranhagen expounded the principle of multiple screening, using combinations of low and high frequency vibratory screens, centrifugal screens, vortex type cleaners and raycell filters. Different dirt particles were considered in reference to types of screens. The slotted plate, he said, was efficient on round particles.

For best results, he said, optimum consistency should be kept at every point along a screen surface. With multiple and varied screens, he said, high outflow and minimum contact of plates by stock is desirable.

"Screens should be selected that complement or supplement one another, performing different types of screening. No one screen," said Mr. Ranhagen, "gives all good results in every respect.

"Combination or double screening is preferred for high cleanliness. The modern high frequency vibratory screens, centrifugal screens and vortex cleaners give



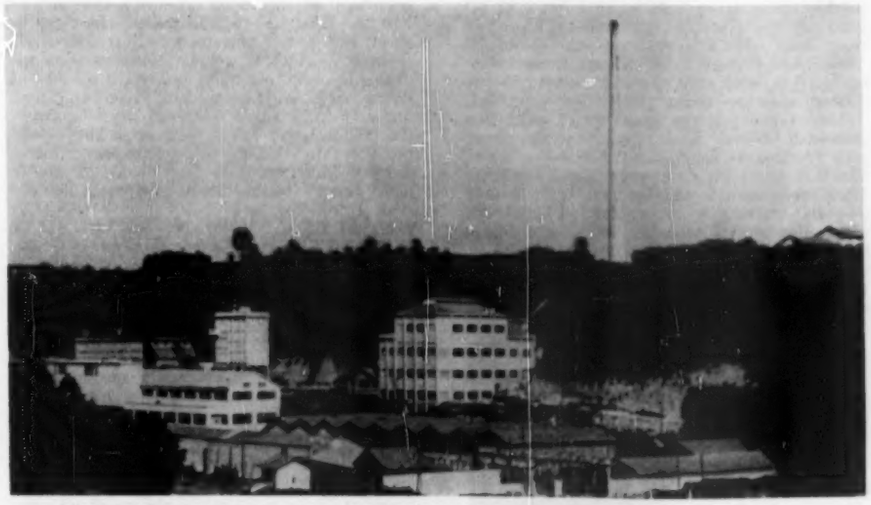
A SWEDISH DESIGN FOR SCREENING

GUSTAF RANHAGEN, Swedish Engineer and former Mill Manager who advocated variety of equipment in screening at Houston meeting, presented this drawing as showing types and makes of screens that could be used in various combinations or cascading arrangements. NOTE THE SYMBOLIC MARKINGS on the drawings which are the Swedish code to identify different types of screens. General types are listed on left; variations of these and names of many makes are listed on right.



HOME OFFICE AND LOCAL OFFICE MEN TRADE TALK IN TEXAS

THAT'S ONE ADVANTAGE OF A CONVENTION—Here's are Headquarters and Local Reps. who get together in Houston: Top—GEORGE KLEINMAN, (left), new Swenson Evaporator Co. rep. at Houston, and his boss, RALPH E. BERGSTROM (right), Mgr. of Swenson's Pulp & Paper Dept. Mr. Kleinman, graduate of Illinois Institute of Technology, a native of Chicago, recently moved South to cover Texas, Louisiana, West Miss., and South Arkansas. Next, JEFF MONTGOMERY (left), Houston Mgr. of A. M. Lockett & Co., installation engineers for Babcock & Wilcox in six Southwest States, chats with FRANK HUTTON (right), B & W's Pulp and Paper Industry Chief from New York City. Third—ED CROWLEY (left), Manager of Pulp and Paper Department of Inflico, Inc., water treatment engineers of Tucson, Ariz., has a rendezvous with JOE M. YOUNG, his Houston "man." Bottom—ROBERT R. CRAWFORD, (left), Sales Rep. for Shartle Bros., Machine Co., (son of President Phil Crawford of Black-Clawson), enjoys a session with EDWARD M. ROOT (right), Sales Mgr. for Southern area for Black-Clawson-Shartle-Dilts, whose home base is Atlanta.



DR. GHISONI'S MILL IN ITALY HAS FINE RECORD OF ODOR ABATEMENT

CARTIERA VITA MAYER & CO. MILL in North Italy, which reports it has succeeded in reducing kraft odors by 95 percent. This exclusive photograph was obtained by *PULP & PAPER* to illustrate report of the paper given by Dr. Pietro Ghisoni, at Alkaline Pulping Conference. Notice high stack in background. This stack and its uses are discussed in article.







THERE WERE 40 LADIES REGISTERED—WE BETTER PRESENT A FEW, HADN'T WE!

LADIES DIDN'T HAVE MUCH TO DO WITH ALKALINE PULPING at Houston but they enjoyed the entertainment. At left: COVER C. PORTER, Southland Paper Mills, discusses plans with Mrs. Porter. Middle: In this group, l to r, are WILLIAM B. COOK, Champion Paper & Fibre Mill, Pasadena, Tex., MRS. COOK, and ERNIE MANDERS, Coosa River Newsprint Co., who got there by way of U. of British Columbia and LongLac Mill in Ontario. At right: FRANK DENISON, Reliance Electric & Engineering Co., and RUTH DENISON were literally "right at home" in Houston and hospitable hosts.

good possibilities for combinations. In double screening with high frequency vibratory screens with slotted plates in combination with centrifugal screens, the best results have been obtained when the former are first in the series."

The Sundsvall engineer emphasized that "the system used is of greater importance than any individual screen and should permit each unit to work at optimal condition."

He said design of secondary and tertiary screening is of vital importance for cleanliness and economy and accepted stock from them should be recirculated to the charge of the primary screening. He supported double screening statistically —"in that every single screen in a combination of two needs only to be the square root as good as the single screen to give the same result."

Good design can minimize water use, he said. He commented that new vortex cleaners are taking hold in Sweden, as they obviously are in this country.

After his talk, he told PULP & PAPER of a strawpulp operation abroad where Jonsson knotters and high frequency Lindblad rotary screens are used with a vortex cleaner, and after bleaching, stock is screened again with vortex types in cascade.

Mr. Ranhagen accepted an invitation to the Gaylord mill after the meeting and from there went to Pacific Northwest mills and to Rhinelander.



HOSTS TO ALKALINE CONFERENCE. PETER KIMEN (left) of Champion Paper & Fibre and FRED W. BISHOP, Southland Paper Mills, general chairman of Tappi Alkaline Pulping Committee which sponsored conference.



ON WELCOME COMMITTEE. (Left) JACK POUND, of Champion, who took care of many details for Mill Tours; (right) I. D. WELLS, Champion, chairman of local committee for conference arrangements.



TOURED CHAMPION MILL. JOHN PARROTT (left) of Champion explains process to LLOYD L. KLINGER (middle), Consolidated Water Power & Paper Co.; and ROY P. WHITNEY (right), Institute of Paper Chemistry.

PULP & PAPER Reviews Other Papers

Presented at 1953 Fall Alkaline Pulping Conference

WASH WATER AND WASH WATER HEATING—By J. M. Ralston and Maurice Klein, Union Bag & Paper Corp.

Mr. Ralston reported use of blow steam plus steam from the last stage of their Swenson evaporators and other heat exchangers provides adequate heat for wash water at Union Bag. To heat the equivalent volume of water for a 1,000 ton mill with live steam would cost $210,000.

Union Bag washes one half of stock with vacuum washers, the other half with diffusers. Wash water has averaged 2,300 gals. per ton of pulp. With semi-chem pulp brought into production at Savannah, the requirement is 3,100 gals. per ton. Water supply comes 75 percent from deep wells at unvarying year round 75 degree temperature, and balance from industrial supply source. Water for washing is not treated; goes to washing at 155 degrees.

Heat exchangers for blow steam were discontinued because of plugging. Now the steam goes to three jet condensers, then to an accumulation tank and to storage. Cold water is introduced upon leaving storage but in this case the intake pipe was extended part way across the tank to meet the cold water addition to permit more time for mixing. When introduced just ahead of pumps, the cold water was not completely mixed resulting in varying temperatures. An automatic control valve adds the water.

The line from accumulation to storage tank was raised above water level in the latter, and turns eliminated to prevent settlement; drain lines were placed for the jet condensers; a relief valve exhausts to atmosphere when excess steam raises pressure, as when several digesters blow simultaneously.

No odor has been complained of in product from carry-over liquor, which has raised soda content from 4/10 to one lb. per 1,000 gals. Scaling up of showers was stopped by holding temperature below 160 degrees. No water is sent to the sewer. Scale consists of calcium carbonate, magnesium silicates, and carryover variables. An 8-in. drain on the blow line reduces carryover liquor. In three months, accumulations in the tank amount to half its capacity. No steps have been taken to correct this. The use of this source of wash water heat and the installation can be recommended for kraft mills, said Mr. Ralston.

THE VALVELESS WASHER—By J. K. Perkins, of Improved Machinery, Inc.

Based on the same tonnage loading and type of pulp, this washer will perform the same job as the regular vacuum washer with a considerable saving in horsepower and building space, said Mr. Perkins. The valveless uses a true barometric column, obtaining an inch for each foot. Smaller tanks are usable (as much as half size) because air is pulled through the sheet and is not entrained in the liquor. He referred to 17 to 19 percent consistency off the drum. In reporting tests, he said 8 percent of liquor can be carried by foam. Pre-refining does not add to washing efficiency as it increases the surface area. The largest drum they could provide, Mr. Perkins told an inquirer, has a railroad limitation of 11 ft. 6 in. As for length, his company thought 20 ft. adequate.

SULFATE PULP WASHING AT THILMANY PULP & PAPER CO.—By P. H. West, Thilmany Pulp & Paper Co., T. T. Collins, formerly of Thilmany, now of National Container, and R. E. Bergstrom, Swenson Evaporator Co.

Tests conducted at Thilmany with rotary filters when evaporator capacity was inadequate to operate as a closed system were reported by Mr. West, pulp superintendent at Thilmany. The experience, he said, proved helpful. To replace 16 diffusers, a Swenson installation was purchased under a guarantee for 200 tons air dry pulp per day with a salt cake loss not to exceed 35 lbs. per A.D. ton of pulp with a dilution factor of 2.2.

Mr. West reported the system went into operation in late 1951 and found that considerable foaming occurred in the screen room when the residual salt cake in the pulp leaving the washers was above 15 lbs. It became necessary to apply considerable wash water and to sewer fifth stage filtrate as the evaporator capacity



GAVE PAPERS AT HOUSTON

INCLUDED IN TECHNICAL PROGRAM were (top row, l to r): AL WILEY, Riegel Carolina—on new pulp cleaning equipment; PAUL H. WEST, Thilmany, and "TEX" COLLINS, formerly of Thilmany and now Nat. Container, who revealed savings with Swenson washers. (Lower row, l to r): FLEET COOPER RATLIFF, of Gaylord Container,—discussed new Lindblad screening there; E. H. SMITH, Crossett Paper Mills—collaborated in paper on Cowan screens performance; and HARRY F. SCHENK, Magnus Metal Corp.—on techniques with flat screens.

was limited to a production rate of 160 tons whereas it is now better than 200 tons per day.

Changes in operation resulted from a study of variables which improved operating results. These included obtaining uniform vat consistencies, shower arrangement and repulper modifications. These permitted a sharp reduction in drum speeds.

Mechanical skimming of the soap in the first and second stage filtrate tanks became necessary as soap separation occurred when the liquor contained 20-22 percent total solids due to low dilution carried forward. The addition to the evaporator provided increased capacity so that the system could be closed. This resulted in running the test which disclosed better than guaranteed performance.

At low permanganate numbers 16-21 the tonnage rate was 225 tons per day with a salt cake loss of 15 lbs. and a dilution factor of 1.44; the drum speeds being 0.9 rpm for the first drum, 1.4 rpm for the second drum, and 1.2 rpm for the third drum. Consistencies off the first drum were 20-22 percent B.D., off the second 18-19, and 13-15 off the third.

EFFECT OF DIGESTER AND LIQUOR ROOM OPERATION ON PULP WASHING—By Wilbur Orr, St. Regis Paper Co.

Laurence L. Clapp, chief chemist at the St. Regis Pensacola mill, read this review of techniques by which digester operation can make washing easier or more difficult, this including variations in cooking and/or cooking liquor.

FOUR STAGE VS. THREE STAGE KRAFT PULP WASHING—By E. A. Harper, and Fritz Paul, Hudson Pulp & Paper Co., Palatka, Fla.

Conducted on Impco brown stock washers with 212 tons on the four stage and 200 tons on the three, the tests were carefully executed over a year's period of actual production, said Mr. Harper, who made the report. Results showed the four stage washer added 23 percent less water to the system while washing 5 percent more pulp to equal cleanliness. For all practical purposes the solids, pH, and efficiency were considered equal; the consistency identical. The pH, 10.175 on four stage and 10.163 on three stage, is that requested by the mill.

Discussion revealed that Southern Advance bag & Paper Co. operates 4-stage and 3-stage washers side by side with a differential of 11 cents per ton in favor of the former, being the cost of using kerosene on the 3-stage to kill foam. Mr. Harper said they use constant overflow skimming at first filtrate tank (first stage) to get rid of soap.

PERFORMANCE OF COWAN SCREEN ON KRAFT PULP—By E. H. Smith, W. S. Gardner and C. L. Brown, Crossett Paper Mills.

Manipulation of plate perforations provides the key to top performance of the Cowan screens, according to this paper presented by Mr. Smith, assistant technical director at Crossett. Maximum results of 9.97 tons per hour of accepted stock (with 0.99 tons reject) were obtained with .085 in. perforations on .1445 in. isometric centers (230,000 perforations per set), 1.2 percent inlet consistency and shower pressure of 9-psig. Pulp left the screen at 0.80 consistency and rejects at 1.81 consistency. Total water flow through the plates was 4,480 gpm. Power consumption at 240 tons per day was 0.38 hp days/ton. In discussion, Mr. Smith said there's practically no maintenance and pulp is clean enough for all unbleached paper. A constant level headbox is used. The screens handle 9 tons per hour with production possible up to 10 tons.

FLAT SCREENS VS. AHLFORS SCREENS FOR BLEACHABLE PINE AND HARDWOOD KRAFT PULP—By Malcolm Pineo and Roy Homans of Brunswick Pulp & Paper Co.

Substantial savings in capital investment required because of smaller housing requirements, plus lower operating costs may be obtained from installation of Oliver United-Ahlfors screens rather than flat screens for bleachable pine and hardwood sulfate pulp, said Mr. Pineo, Brunswick technical director. The Ahlfors screen functions in reverse manner to the flat screen in that acceptable stock is forced upward and rejects are carried away from the lower level. Of prime interest to Brunswick was screening of the pulp at higher consistency.

USE OF CENTRI-CLEANERS ON SEMI-CHEMICAL PULP—By A. L. Wiley, A. E. Stafford and Russell Adams, Riegel Carolina Corp.

This paper was presented by Mr. Wiley, who is technical director of this recently built mill. He discussed the effectiveness of dirt removal from fibrous pulps of low consistency with these new vortex type cleaners which were originally developed by Hammermill Paper Co. and Howard Smith Mills in Canada. Requiring small space, they are credited with removing 90 percent of visible dirt. They were described in PULP & PAPER for the first time in the Sept. 1952 issue on page 84. They have been installed in many mills in the past year for all kinds of pulps. Research and pilot work began at Hammermill in 1941.

SELECTIVE PARTICLE SEPARATION BY CONTROLLED FLUID FORCES ON A FLAT SCREEN—By H. E. Schenk, of Magnus Metal Corp.

In flat screen operation the first 14-ft. plate section affords the maximum service, the second doing less because of stream changes, this being due to new type screens that are based on flotation rather than on the old European factor of screen opening, said Mr. Schenk.

Screen room capacity should be built up of parallel settings rather than in extension through additional plate sections, he said. In subsequent discussion he advanced the thought of using but one section, since that yields the highest quality, and then using other equipment to do a real speck separation job.

He urged individualized units rather than single screen room installations since this per-



WAVING GOODBY after Champion mill tour are ANDY PESCH, International Paper Co., and J. B. HOMAN, Staley Mfg.



***MINNESOTA FRIENDS MEET.* In mid-thirties these three worked at Northwest Paper Co., Cloquet, Minn.: (l to r) W. E. ERICKSON, now Kraft Mill Supt. there; ROY HELLA, now its Manager of Pulp Mfg.; and CHARLES P. KIRCHEN, now Southern rep. for Buckman Laboratories, Memphis.**



***ANOTHER CHAMPION PROCESS IS EXPLAINED.* JUNIUS SAPP of Gaylord has back to camera and (l to r) EDWARD P. WOOD, Hollingsworth & Whitney; SANFORD SWASEY, Champion; FRANCIS X. NERNEY, Bocco Sales.**



***CHAMPIONS GET TOGETHER.* (Left) GEORGE M. TROSTEL, Champion mill manager from Canton, with GLENN H. SMATHERS (right), pulp mill supt. at Pasadena.**



***OLD FRIENDS MEET* in dim screen room at Pasadena mill. (Left) ED P. WOOD, Hollingsworth & Whitney Co. with GLENN SMATHERS (right), of Champion. They worked together 35 years ago in Champion's Canton Division.**



***YOUTH LEARNS FROM VETERAN.* RAYMOND S. HATCH (middle), of Hudson Pulp & Paper, has two eager listeners: WESLEY YOUNG (left), with International Paper, Springhill, La., and J. C. BROWN (right), of Weyerhaeuser, Springfield, Ore.**

mits closing of sections. Lignin coated bubbles, breaking against plate undersides cause a film coating. Inconel and stainless steel will last indefinitely, but the former is more resistant to fatigue. Plate metal fatigue may be avoided by frequent cleaning; the top may look good but check the underside, he said. Due to harmonious vibration strong anchorage and foundations are essential. Stock coming up over the end of the plate with a 90 degree turn causes flotable specks to come to the top.

USE OF HIGH INTENSITY SCREENS IN SULFATE PULPING FOR COARSE PAPERS —By F. Cooper Ratliff, Gaylord Container Corp.

Steps taken preparatory to increase screen room capacity to accommodate an enlarged new 465-ton washing installation were described. Water is lifted 50 ft.; space being at a premium. White water goes to a half million gal. reservoir for various servicings. The mill operates three diffuser rooms and four lines of vacuum washers, all closed system.

The subject of study was installation of centrifugal screens vs. high intensity, calculation being based on 2.0 consistency at 3,400 gpm. Thickener capacity has been increased by addition of two new 9½ by 14 ft. valveless deckers.

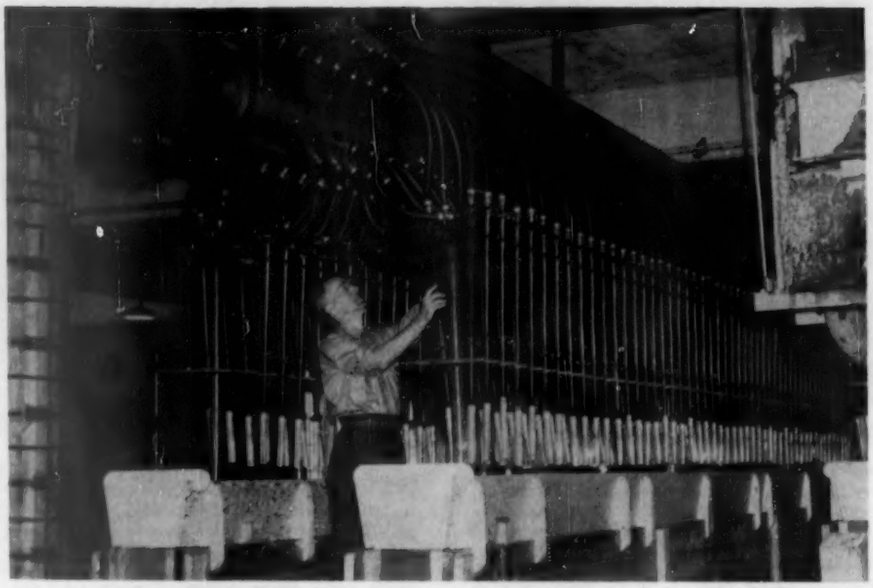
Engineering estimates submitted to management showed capital costs as 15 to 17 percent for the centrifugal and high intensity systems; and a 6.3 percent operation cost advantage for high intensity.

The mill installed four Impco-Lindblad high intensity screens in 1953, three as primary and one secondary, but with valving arrangements so that if the fourth be cut out, the third primary could be used for tailings. Design was for 125 tons per screen with 500 ton total daily. Result has been as high as 470 tons per day with sufficient overload capacity that with one screen down the volume handled proved adequate. The use of the high intensity screen required the installation of water filters. Experience has been that if crowded the screens will handle more stock, but good stock in rejected material increases. Mr. Ratliff said they proved investment is low, power consumption low, and capacity is satisfactory. But they have not operated long enough to determine long-term maintenance or life.

USE OF JACKSON-CHURCH ZENITH PRESS IN HANDLING PULP MILL REJECTS AT ST. JOE PAPER CO.—By R. E. Bringman, chief chemist at St. Joe.

In discussing the use of the Jackson-Church Zenith press in raising consistency of rejects, Mr. Bringman said that $155 per day is saved in evaporator steam.

Rejects come from the dewatering screen and are returned to the blow tank. Rejected stock enters the press at 3 percent consistency, and is raised to 35 to 40 percent. Manipulation of the press in respect to volume is effected with a floating cone. About 50 percent of reject stock consists of good fibre. No great maintenance has been experienced.



WHAT A BATTERY! HOUSTON HEARD ABOUT THESE CLEANERS

EVEN AL WILEY, Technical Director of Riegel Carolina Corp. who gave a paper on the Bauer Centri-Cleaners, probably hasn't seen as huge an installation of these relatively new vortex type cleaners as this multiple installation shown in this new photograph obtained by *PULP & PAPER* of a multiple primary-secondary installation at POWELL RIVER CO. GUSTAF RANHAGEN, Swedish engineer who also gave paper at Houston, said this type of cleaner is taking hold in Sweden.



THEIR PERFORMANCE WAS DISCLOSED AT HOUSTON

THESE ARE THE 3 SWENSON-NYMAN *Pulp Washers*, 9 by 16 *ft. drums*, at Thilmany Pulp & Paper Co., Kaukauna, Wis., whose performance was discussed by PAUL WEST, Pulp Mill Supt., Thilmany, in a paper he presented at Houston Alkaline Pulping *Conference, reported in these pages.*

Semi-Chem Panel Tackles a Hardwood Problem

SEMI-CHEMICAL PULPING, in panel discussion, was the climactic windup of the Alkaline Pulping Conference at Houston, Tex., in November. Southland Paper Mills has added some extensive timber holdings and finds it necessary to use more hardwood. So Cover Porter, assistant mill manager at the Texas operations, tossed their problem right in the laps of the panel. They got a lot of answers.

But first there were some timely reports on research and also new equipment.

Dr. J. N. McGovern, Forest Products Laboratory, Moderator, read a detailed report on disc refining of aspen, prepared at the Madison lab by Friedrich A. Aflenzer, who had returned to Prague. The study produced tables of detailed results of refining practices covering accepted generalities in that field.

Dr. Don J. MacLaurin, of the Institute of Paper Chemistry, read a paper prepared with J. F. Whalen, also of the Institute, covering tests of semi-chemical pulping values of hammermill prepared wood waste compared with conventional material. Screening was performed to various sizes. Results showed chip length variance had no significance in tear; yields were about the same except when unbarked slabs were involved.

Len G. Durant, of Pandia, Inc., described that company's new Vapring continuous cooking process. In this, the noncondensable vapors are extracted from the wood by steam, replaced by cooking liquor under pressure. After an interlude, excess cooking liquor, that is unabsorbed is extracted and cooking effected. The entire process requires 45 minutes. A pilot plant is being built. Tests were made on spruce and balsam.

William Nelson, technical director, Green Bay Paper & Pulp Co., reported successful use of screw presses on semi-



Electron microphotograph (x50,000) of Pexol size precipitate on bleached sulfite paper.

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SOUTHLAND TOSSES HARDWOOD PROBLEM TO SEMI-CHEM PANEL

POSES PROBLEM—COVER PORTER of Southland asks panel how to substitute hardwood in newsprint and board.

PANEL HUDDLES (l to r): JUNIUS E. SAPP, Gaylord Container; W. P. LAWRENCE, Champion; MR. PORTER; M. G. KUHLMAN, Fleming & Sons; MALCOLM PINEO, Brunswick Pulp & Paper; DR. JOHN McGOVERN, U. S. Forest Products Lab; and DR. DON MACLAURIN, Institute of Paper Chemistry.

TELL PRODUCT QUALITY—JUNIUS SAPP (left) gives his views on semi-chemical pulping as DON MACLAURIN (seated) listens; and at right, at microphone, M. G. KUHLMAN discusses hydration effects of semi-chemical pulping.

AFTER THE SESSION, two colleagues in semi-chemical pulping talk it over: DR. JOHN McGOVERN (left) of U. S. Forest Products Lab, and GEORGE E. MACKIN, manager of Green Bay Paper & Pulp Co.

chemical pulp. Initiated to reduce stream pollution, the original press has been duplicated and now planned are four presses to serve the entire 150 ton mill capacity. The presses come from French Oil Mill Machinery Co. through Bauer Bros. Current equipment has 7-in. ID barrels but an 8½ in. ID barrel will be tried. The initial press reduced 40 to 44 tons in 24 hours to 35 to 37 percent moisture content, starting from 55 percent. Savings are accrued from reduced evaporator operation. Power savings in refining are greater than power needed for the presses.

The Panel Discussion

Semi-chemical processing of hardwoods was informally discussed by a panel and from the floor. Panel members included Dr. McGovern, Dr. MacLaurin, Malcolm Pineo of Brunswick, Myron G. Kuhlman of Fleming & Sons, W. P. Lawrence of Champion, and Junius E. Sapp of Gaylord.

Cover C. Porter, assistant mill manager, Southland Paper Mills, was moderator. As a basis for discussion he said in recently acquiring 200,000 acres of forest land from Texas Long Leaf Lbr. Co. (bringing holdings to 350,000 acres), Southland absorbed a substantial acreage of hardwood lands running 75 percent post oak and 25 percent gum in mixed stand. The company has been using poison to prevent hardwood encroachment into good pine, but the new acquisition has so enlarged the problem, that solution should come from substitution of 50 tons of hardwood for part of the 200 tons of pine used for chemical pulp.

The mill produces 60 tons daily of cylinder machine board besides 400 tons of newsprint. It has a "spare" digester, wood handling facilities, and separate cooking could be managed.

First stipulation is that the news sheet, now 100 percent pine, must have wet strength at the couch. A question from the floor, why not change the couch (i.e. install a pick up), went unanswered as not to the point of discussion.

Dr. McLaurin: "Gum can be pulped with neutral sulfite, but tends to have low tear."

Mr. Porter: "Oak is the major problem. What effect will there be on washers if 150 tons of kraft and 50 tons of semi-chem are blended just ahead of them?"

From the floor: "One mill uses 10 percent to 12 percent that way with semi-chem based on 50 percent oak and 50 percent gum, and puts into newsprint. A Canadian newsprint mill replaced 13 percent that way with normal operation of three 8x12 Impco washers."

A Wisconsonite: "We are looking for the same answer. On a 24 hour test we ran 80 and 20 percent mixture; observed no washer effect."

From floor: "We ran into trouble refining sulfite and other, after bleach."

Mr. Pineo: "We run hardwood and then pine several days alternately; no trouble washing yet."

Washer Manufacturer: "A small addition of hardwood okeh, but as the amount goes up your washer capacity will come down."

An East Coast comment: "We can't get over 90 tons per day semi-chem over an 8x10 washer." *West Coast:* "We run 35 percent hemlock and 65 percent fir; put in two high density towers after brown stock; wash separately by shifts and mix on screens."

Mr. Cover: "What pulping will exploit the hardwoods to maximum?"

One reply: If strength is wanted, the bleached neutral sulfite semi-chem. You can use full sulfate but in that process oak is last on the list."

A Gaylord comment: "We have tried semi-chem on the filler side."

Discussion reverted to the chemical pulp furnish for newsprint. If good wet strength is needed in the sheet at the couch, there's involved the rate of drain and dewatering before it reaches there, it was pointed out. Weakness here might mean it's wetter at the couch. Also, the question of opacity and inking quality was raised. "Why not use the full kraft process on hardwoods?" asked one.

On full kraft with hardwoods, particularly oak, the strength is considerably lower at the couch than when using the semi-chem process, it was stated. A peculiarity of semi-chem is that it increases strength on bleach; at the end it may be close to pine kraft, another said.

There appeared agreement that the best choice for hardwoods is neutral sulfite semi-chemical cooking with bleaching for strength. It was said that inking is better with mixed pine kraft and semi-chemical hardwoods than on straight pine.

General conclusions were that the cylinder machine at this time presents the best outlet for semi-chemical pulp production.

Discussion moved over into bleaching, and it was said that trouble is experienced with shives in neutral sulfite; also trouble may develop in the caustic extraction stage. Centri-Cleaners were declared essential for hardwood semi-chemical pulp.

In discussion on refining of mixed stock, one expression was that the neutral sulfite stock tends to hydrate, caused by pressure.

A refiner manufacturer: "In some machines, some application of pressure is needed."

Dr. McGovern: "You would not want to refine short fiber after bleach, so refine long fibers only."

Mr. Kuhlman: "Easy hydration is the problem in refining, but it is the hydration that helps in inking, particularly with gloss ink."

One Machine Is Never Off *Life* Paper

—Highlights of Champion Mill Tour

A WELL-STAGED TOUR of The Champion Paper & Fibre Co. pulp and paper mill, broken up in small groups, not over a half dozen or so in each, and each with a qualified supervisor or technician as guide, was a highlight of the Houston convention.

Many delegates made the trip by buses to the Pasadena suburb, 17 miles. The welcome sign was out at Southland, too, in Lufkin, but only a few made that trip because it was 120 miles.

Another contribution by Champion was an inspirational luncheon address by its new assistant Texas division manager, Karl R. Bendetsen.

A booklet told visitors this mill has 1,805 employes, three paper machines, two with on-machine coating, a board machine



BELOIT DIFFERENTIAL DRIVE holds steady draws mechanically. No belts to slip or motors to vary under changing power demands. Gears are of standard types, for simplified maintenance. Extremely exact adjustment of draws makes possible minimum strain on the sheet, thus reducing shrinkage in width, raising sheet tests, and sharply cutting machine breaks.—*Beloit Iron Works, Beloit, Wis.*

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PAPER MACHINERY

and a pulp machine which was producing baled oak pulp for expert sale in England. The booklet said the mill makes 330 tons of paper and 110 of board daily; 525 tons of pulp, of which 450 are chemical grades, 250 of the latter being consumed there. It uses daily 30 million gals. of water, 92 tons of clay and 19½ tons of starch.

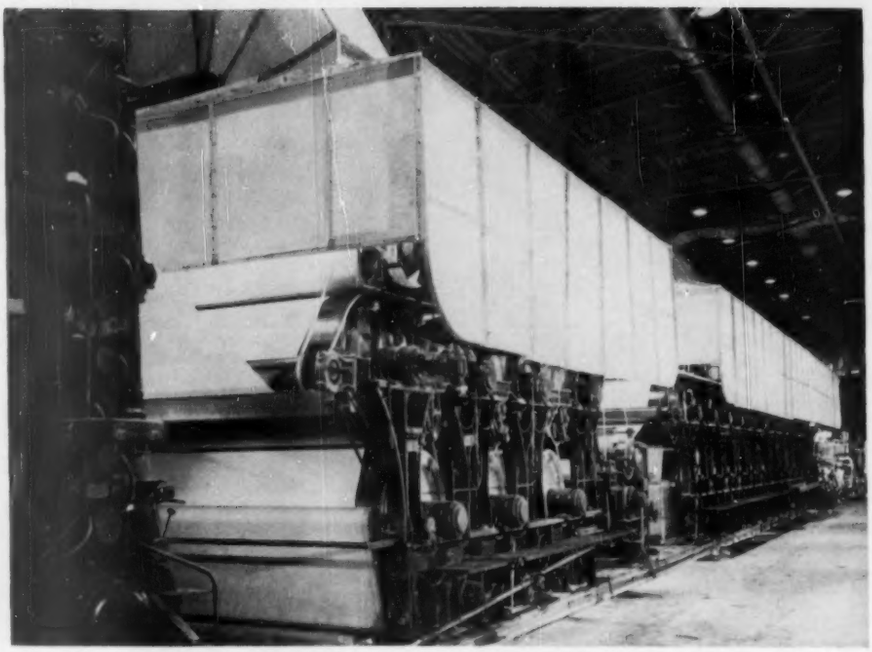
One machine has been running on *Life* coated paper ever since it started up in 1940. Two of the other machines were moved in recent years from the Hamilton, O., Champion mill to Houston.

Visitors saw the woodyard, where a new barker is being added; then the groundwood mill with two Roberts grinders and two Jackson-Church Zenith screw presses ahead of one tower for sodium and hydrogen peroxide bleach.

New installation they saw included an outdoor 6-body Swenson evaporator, a Babcock & Wilcox 250 ton recovery boiler and a 150 ft. Allis-Chalmers lime kiln with a Rotoclone, alongside a second 120 ft. kiln. Conversion of some older boilers to bark-burners was interesting. Also experimental use of two types of odor masking chemicals.

Many of the delegates were especially interested in the good service record of 8 digesters of 1 to 1½ in. mild steel, several of them 17 years in service. Multistage bleaching and an elaborate finishing operation were other highlights.

They saw a barge being loaded with coated paper for *Life* which would reach Donnelly's in Chicago by way of the Houston Ship Channel and Mississippi River.



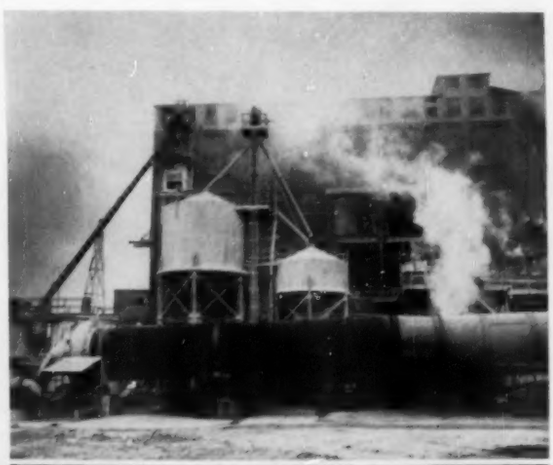
FAMED NO. 22 Fourdrinier machine which has been extensively modernized and has been rolling off machine coated paper for *LIFE* magazine ever since the day it started up back in the 30's and was running smoothly at 1,200 fpm the day delegates were at Houston.

Champion Mill Shows New Installations

DELEGATES TO ALKALINE PULPING CONFERENCE in Houston, Texas, who took advantage of mill tour saw these new installations at The Champion Paper & Fibre Co. in suburban Pasadena.



MOST OF THESE DIGESTERS—a row of 8—at the Champion Mill in Texas have made history for a fine record of good service, some of them being 17 years old. They are 1 to 1½ in. mild steel shells. Some observers say it tends to confirm better record of older steels in corrosion histories.



ALLIS-CHALMERS MFG. CO. built this new 150 ft. long Lime Kiln for the Champion Mill at Pasadena. Here it is shown in operation, blocking out visibility of a paralleling older kiln of 120 ft. Pulp Mill in back.

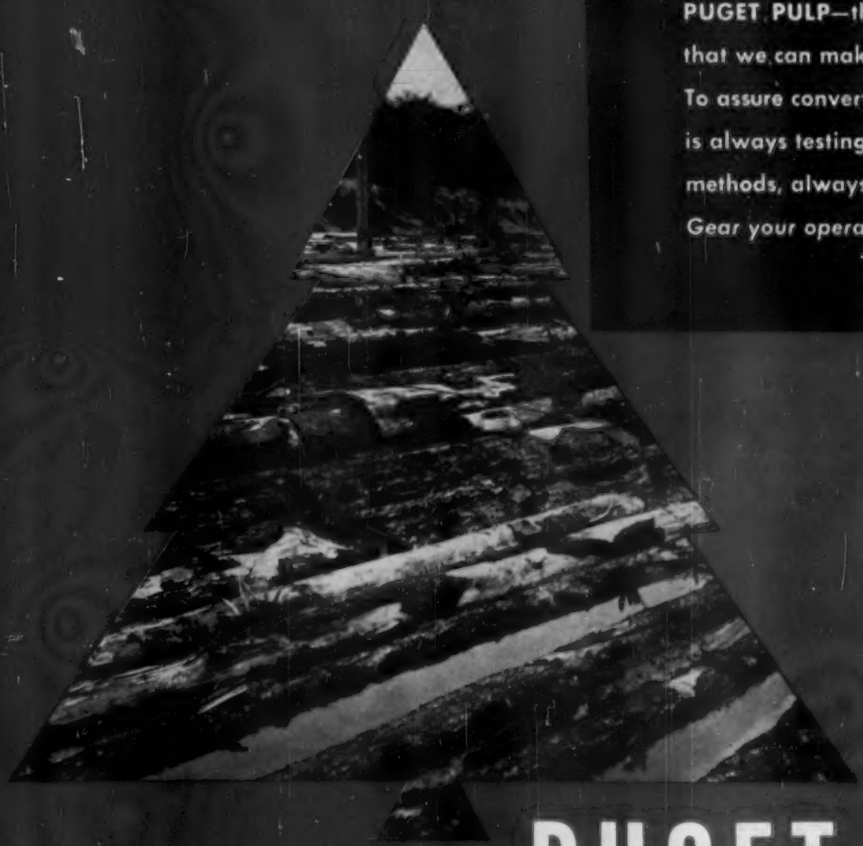


AN OUTDOOR INSTALLATION of a six body SWENSON EVAPORATOR with potential capacity of 600 tons which attracted great interest.



NEWEST BOILER in its lineup of three on recovery burning of liquor is this BABCOCK & WILCOX 250-ton installation. Interesting was conversion of some other boilers to bark burning.





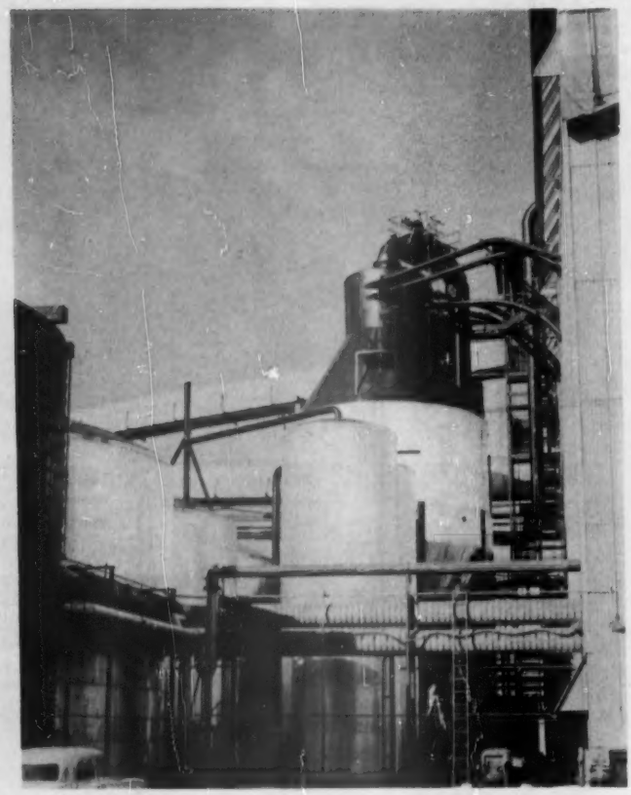
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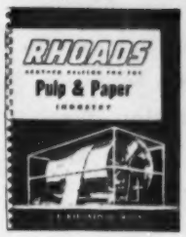




Rhoads leather belting specified for new Minton Dryer at Weyerhaeuser-Everett Pulp Mill

Why do so many of America's leading paper mills (like Weyerhaeuser) specify Rhoads belting for their paper machine cone drives? We like to believe it's because of our close association with the paper industry and our understanding of the newest developments in paper making machines and the drives necessary to operate them.

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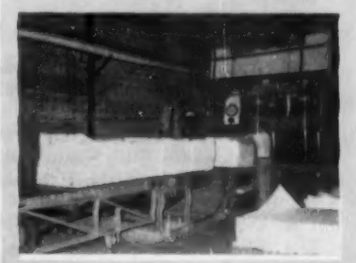
Years of experience in the construction of large industrial *buildings* and plants has given us broad understanding of the *requirements of the pulp and paper industry* and the special problems involved during the period of *building and machinery* installation. A few of the recent plants we have built or expanded are for Weyerhaeuser Timber Co., Longview and Everett, Washington, also *Springfield, Oregon*; *Crown Zellerbach* Corporation, West Linn, Oregon and Camas, Washington; *Publishers' Paper Co.*, Oregon City, Oregon.

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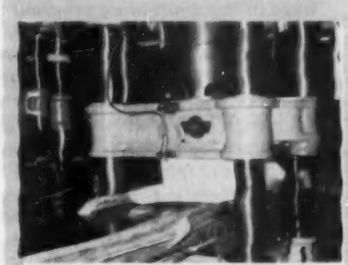
WASHINGTON PRESSES selected for new Weyerhaeuser mill



This view of the finishing room of the Weyerhaeuser mill shows the Washington pulp baling presses in action. Pulp at the new mill is derived entirely from chips from existing saw-mill operations in Everett. No trees are cut expressly for this pulp mill.



Above, the finished pulp is accurately piled in 400-pound stacks on the scales, the last hand-operated procedure until the compressed bales come out of the huge presses ready for wrapping and tying. Below, the large platen on one of the Washington presses reduces the stacks of pulp to pre-determined sized bales in a completely automatic operation.



One of the outstanding engineering *features of the new Weyerhaeuser Timber* Co. sulphate pulp mill at Everett, Wash., is the almost completely automatic finishing room operation following the processing of the high grade pulp.

The 400-pound stacks of finished pulp are automatically carried on transfer tables from the scales to the press room, *loaded onto two Washington Iron Works* pulp baling presses, compressed to uniform size bales, discharged and conveyed *to the wrapping, tying and stacking* station.

The two Washington 1,000 ton presses *are vital to the unparalleled efficiency* and speed of operation in the Finishing Room. Easily able to handle up to 300 tons of pulp daily the twin hydraulic presses feature an entirely automatic *cycle controlled operation . . . one com*plete cycle as fast as every fifteen seconds. A maximum pressure of 1,000 tons *developed by an hydraulic system at* 2,500 p.s.i. compresses the pulp bales to a predetermined size.

These rapid traverse presses have a maximum opening of 54¾ inches with a stroke adjustable to 36 inches. Working *platen area is 43 inches by 50 inches.*

The presses used by Weyerhaeuser are standard Washington Iron Works pulp *baling presses, engineered to deliver* constant and trouble-free production with pin-point control and minimum operating and maintenance costs. Washington presses have consistently been the first *choice of pulp mill design engineers . . .* eight have been installed in the newest pulp mills in the United States and Alaska *. . . many others have replaced older* presses in existing mills.

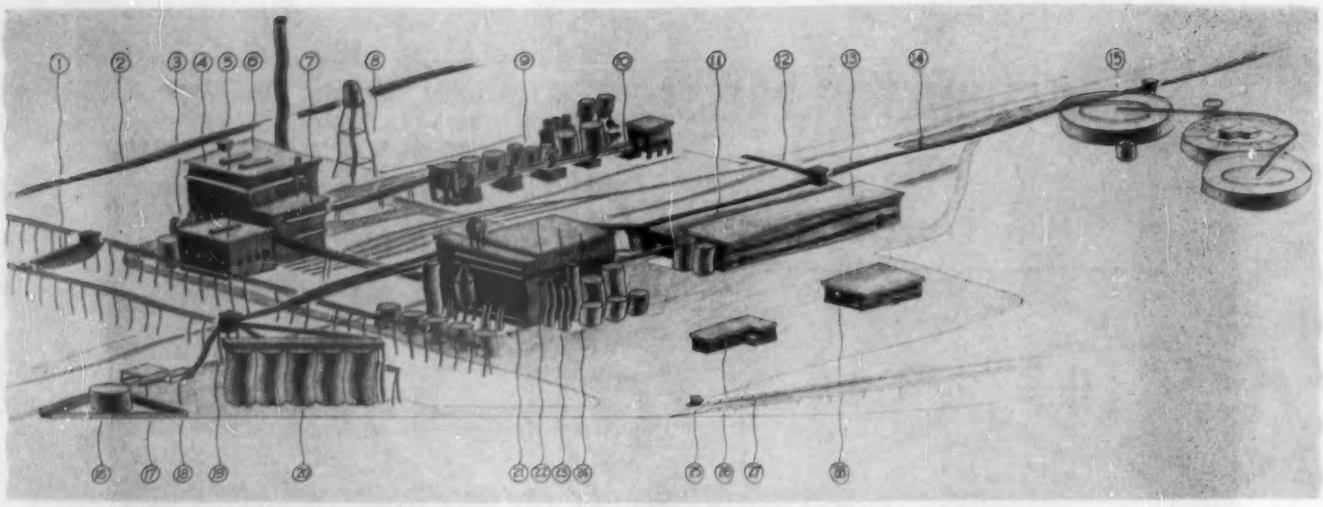
Get the Full Story!

As the leading western manufacturer *of hydraulic hot plate plywood, door and* **hardboard presses, and pulp baling presses, Washington Iron Works invites** *inquiries for either standard or special* **types of presses and accessory devices.** ***Washington Iron Works, 1500 6th Ave.*** **South, Seattle 4, Wash.**

WASHINGTON IRON WORKS

Since-1882

WASHINGTON IRON WORKS



DRAWING OF WEYERHAEUSER KRAFT PULP MILL, EVERETT, WASH., SHOWING . . .

1. Craneway
2. Snohomish River Bulkhead
3. Black Liquor Evaporaters
4. Recovery Furnace
5. Turbine Room
6. Electrostatic Precipitator
7. Power Boiler
8. Water Tower
9. Recausticizing Plant
10. Lime Kiln
11. Warehouse
12. Chip Conveyor from Sawmill "C"
13. Machine Room
14. Chip Conveyor from Sawmill "B"
15. Filter Plant
16. Fuel Oil Storage Tank
17. Chip Unloading Pit
18. Personnel Parking Area
19. Chip Conveyor Transfer Tower
20. Chip Storage Silos
21. Digesters
22. Bleach Plant
23. Brown Stock Washers
24. Brown Stock Screens
25. Gate House
26. Administration Building
27. Entrance Ramp
28. Maintenance Building

"Grouping" Makes for Easier Operation

OUTSTANDING FOR ORIGINALITY and efficiency in engineering is Weyerhaeuser Timber Co.'s $20,000,000 bleached kraft market pulp mill on a 23-acre site along the south shore of the Snohomish River at Everett, Wash.

This is a ruggedly and simply equipped plant, but laid out with greatest care and foresight in centralizing groups of operation controls.

Easily producing 250 tons a day of baled high brightness paper grade pulp within present design, and laid out with a view for ready expansion, it is also capable of producing rolls of viscose pulp for rayon, explosives, etc., whenever required.

This is believed the only pulp mill in the world without a woodroom. Not a single additional tree is cut to supply it. Chips, mostly Douglas fir, are made of hydraulically-cleaned leftovers at four Weyerhaeuser sawmills. The barking ahead of sawmills makes them quality chips, mostly from sapwood.

A 1¼ mile-long conveyor brings chips from two adjacent mills. Others come in special designed railroad cars from sawmills at Snoqualmie Falls and Enumclaw, east and southeast of Seattle. The new mill is on a former swamp, filled in over the years, alongside the Pacific Highway, U. S. 99, just 30 miles north of Seattle.

The flexible Rice Barton Fourdrinier and Minton totally-enclosed vacuum dryer, the fourth Minton in a Weyerhaeuser mill, rolled out its first pulp Aug. 26. The Minton is the longest ever built for pulp. It is about 25 years since the first Minton dryer went into operation. The advantages in color and cleanliness obtained by this manner of drying have led to the use of these dryers in each of the new Weyerhaeuser market pulp mills.

Some engineering highlights:

1. World's longest chip conveyor—an octupus-like 1¼ mile long overhead conveyor and parallel walkway, entirely housed.

2. "Pulping Group" section where there is a common and unusually compact operating floor for the six digesters and the 6-stage bleach plant and brown stock washing and screening.

3. "Power and Recovery Group" where evaporators, recovery boiler, power boiler and turbines form a tight square with all major functions of control and operation in the center area.

4. Some entirely new instrumentation, particularly in screening, washing and bleaching.

5. Longest Minton dryer and a flexible Fourdrinier end.

6. Almost completely automatic cutting, baling, tying and stacking operations following the machine.

7. Nearest to a completely around-the-clock automatic filter plant, with water piped six miles from above the salt-carrying tides of the river.

8. A new type waste liquor pipe-line and telemetered ponding system, with controlled release on tides.



HOWARD MORGAN (left), Vice Pres. of Weyerhaeuser Timber Co., and Pulp Division Mgr., headquarters, Tacoma, Wash., who has seen five major units added to his division's establishments since he joined the company in 1946. Born in Milford, Pa., he graduated from Syracuse in 1926, received his master's there in 1928 and taught there and at the Institute.

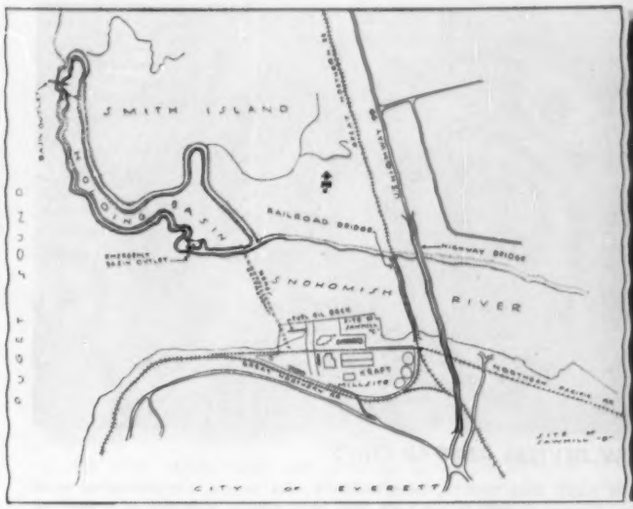
RUSSELL J. LEROUX, (right), who is now Mgr. of Sulfite and Sulfate Mills at Everett for Weyerhaeuser. He came to the company from Wisconsin where he was long identified with the industry and graduated from the University of Wisconsin.

Comments by Weyerhaeuser, Morgan and LeRoux

"Fifty years after our first sawmill was built in Everett, this new unit is the last word in our continuing program to get the most possible value and usefulness from each log harvested on our Tree Farms," J. P. Weyerhaeuser, Jr., president of the company, told PULP & PAPER. "This mill has created 220 new jobs and as additional forest products plants are completed we will add 450 more jobs by June 1954."

Vice President Howard Morgan, who has seen five major units added to the Weyerhaeuser Pulp Division since he left the vice presidency of Munising Paper to become its manager in 1946, stressed the human element—need of good men and good minds to build and operate a new mill.

"About 70 of the 220 new jobs in this new mill, with a payroll of about $1,000,-





WHERE WEYERHAEUSER MAKES KRAFT PULP

THIS MAP SHOWS location of Weyerhaeuser's new market kraft pulp mill on the Snohomish River, in north Everett, Wash. *Note how it is close to two Weyerhaeuser Sawmills—B and C —whence it receives chips.* Two trunk railroads and the Pacific Highway are on right. At top left—on Smith Island, a waste *island in the river, is the holding basin for waste liquor piped* there, and released on high tides into Puget Sound.

A NEW AIR VIEW FOR PULP & PAPER

HERE IS FACSIMILE of new air view which appears on our cover of Weyerhaeuser's new kraft pulp mill at Everett, Wash., showing most re*cent installations and additions and more complete than any picture yet* published. AT RIGHT: KEN KNUDSON, Chief Photographer, Everett Herald, who took it. He is son of KENNETH A. KNUDSON, Purchasing Agent *of Everett Pulp & Paper Co. from 1926 to 1953, when he retired. (See* drawing on facing page for identification of buildings and installations)



in New Weyerhaeuser Everett Mill

000, were filled by men from five other *Weyerhaeuser pulp and lumber mills. And* they left new jobs behind them to be filled. *Many who had been hourly workers are* now holding key jobs," he said.

Weyerhaeuser's first pulp mill, making sulfite for market, started in 1931 in Longview, Wash. Another sulfite mill was built at Everett in 1936. Under Mr. Morgan, major projects completed were a unique *magnesia base recovery plant for the sul*fite mill at Longview in 1948; a Longview *market kraft pulp mill also in 1948; a* Springfield, Ore., kraft containerboard *mill in late 1949, expanded in 1952; a* kraft containerboard mill and pulp addition at Longview in 1952; and now the new kraft mill in Everett.

Russell J. LeRoux, now manager of sulfite and sulfate pulp mills in Everett, likewise emphasized careful selection of key *men and staff for the new mill, carried out* under his direction and immediate super*vision of Evan Wood, personnel and safety* supervisor for both Everett mills.

"We gave our own people in other mills first chance at new key jobs and many volunteered. We selected 40 from the other Everett mill, where many had experience on a similar machine and dryer. From Longview and Springfield we drew men with kraft experience, 17 from Longview and 9 from Springfield. And a few others came from Coos Bay and Everett *sawmills. Many of our supervisors started* as hourly workers when we entered the *kraft field in 1948.*"

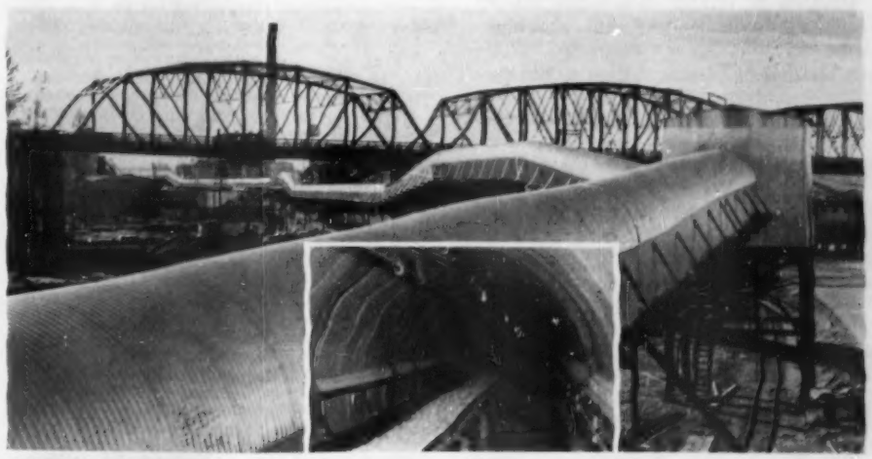
Engineering and Construction

Gerald F. Alcorn, since graduating in chemical engineering from the University of Washington in 1931, has been with the *Weyerhaeuser Pulp Division, serving in a* number of key positions. At Everett he *saw the second major mill project which* he directed take final form. As the division's construction engineer since Otto C. Schoenwerk's retirement, Mr. Alcorn had charge of engineering and construction of *the recent kraft containerboard and pulp* mill additions at Longview, as well as the *new Everett mill. For many months he* had both projects under way simultane*ously.*

In general, the Alcorn techniques of engineering are: Simplicity; extensive but efficient instrumentation without frills; the "group" principle in positioning of related functions, as contrasted to the *"straight line" flow popularized in other* new plants; and selection generally of *lower cost but practical construction ma*terials.

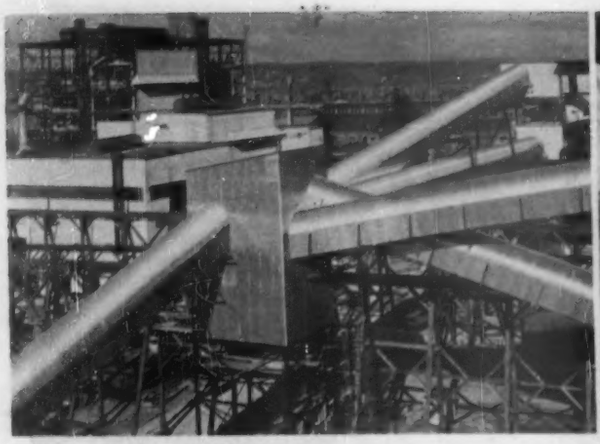
Mr. Alcorn worked with a smaller staff than is often the case in projects this size —even when he had two big new mills on *the fire. He was assisted by C. L. (Bill)* Carns, now plant engineer at the new mill, *and a half dozen others. With such a small* staff, it is remarkable so many features in *the mill deviate from standard practice,* introducing new equipment.

In general, construction materials and styles were structural steel frame buildings with corrugated asbestos for side



CARRIES CHIPS OVER A MILE

DODGING UNDER highway and over 3 RRs, is this Reynolds Metal sheathed conveyor from Sawmill B. Link-Belt supplied all mechanism. In 7 ft. wide *interior is shown one of 12 belts.*



HERE CHIPS ARE DISTRIBUTED

TWO AND ONE-HALF miles of rubber belts (each section must be a loop) lead to or from this central point. Conveyor at left is for chips unloaded from rr cars or trucks. In order, starting with nearest one, the other conveyors are: To storage silos; from silos; to Mill B and C; to top of digesters.





NEW DEVICES UNLOAD CHIPS

BOTH CARS AND TRUCKS, from sawmills near Seattle, can unload at same time. Closeup at right shows what goes on at opened right side of rr car—All Link-Belt equipment. Cables linked to chains pull rakes inside rr car back and forth, discharging chips onto conveyor in sump.

walls. This made it possible to move equipment into a building right up to the time it was closed up, and easy removal of side walls will facilitate changes of major equipment after completion.

Bethlehem Pacific Coast Steel Corp. turned out 1,900 tons of fabricated steel for the main structures. All lumber and timber came from right next door—the Weyerhaeuser Lumber Division.

L. H. Hoffman, Portland, Ore., was general contractor and steel erector. Hoffman employed up to 700 men on the job. Electrical Construction Co., Portland, was electrical subcontractor, and Mechanical Constructors, Inc., was piping subcontractor.

A feature is use of corrugated glass in lieu of sash. The only exception is in office buildings.

Concrete roofs are made of both precast slabs and poured-in-place roof slabs. This was selected because it was less costly than reinforced concrete and moved faster after getting started. The recovery and power building "group," for example, was hardly closed up before it was running. Machinery and even wiring could be installed before closing up.

Because of former swampland history of the fill on which the mill was built, tanks and buildings are supported on piling. There is no basement for the pulp machine and pulp finishing building, built on a sand fill, and much standard auxiliary equipment so often seen in a basement, is found alongside the machine.

The Minton dryer, Weyerhaeuser officials said, was chosen for efficiency and range and flexibility for making many grades. And the Fourdrinier gives means of accurate control of caliper and density. The wet end duplicates the wet end of the sulfite mill machine in Everett, just across the city, so wires are interchangeable. The press section duplicates the press section on the Longview kraft pulp machine, and dryers—48 in all—exceed in total number the dryers on any other Minton dryers.

For this machine, Weyerhaeuser went to a General Electric steam turbine drive with line shaft and flat belts. All its other machines were electrical section drives. But here it has gone right back to the simple drive and this facilitates start-ups and care of electrical equipment, its engineers said.

Wood and Wood Preparation

A former virtually worthless sawmill leftover is made in this mill into a high quality, high value pulp. Weyerhaeuser pioneered in the Tree Farm movement and resources come from its Tree Farms. They come largely off the Vail-McDonald Tree Farm of over 500,000 acres, serving the two big Everett sawmills. This farm is a considerable distance to the south and railroad cars of big logs are dumped in Puget Sound near Olympia, Wash., and towed about 80 miles to Everett.

The White River Tree Farm, for the Enumclaw, Wash., sawmill and the Snoqualmie Falls Tree Farm (through which many transcontinental motorists drive), serving sawmills of those names, are closer to these operations. They make chips for the new mill, too, which are hauled by rail to Everett. The rr cars have side openings and a Link Belt chain mechanism pulls rakes across them to dump chips onto a conveyor.

Douglas fir is dominant, though there is some hemlock and other firs, and regrowth is at the rate of 1¾ cords per acre average but runs as high as two cords or more for cycles up to 80 years. No Tree Farm trees are cut under 160 years of age as a rule, and the Everett mill makes possible the use of tree tops, broken when big trees fall, slabs, edgings, etc., that were never usable before the kraft mills were built.

Each of the four sawmills now have hydraulic big log barkers and large high production chippers, all manufactured by Sumner Iron Works, of Everett. Weyerhaeuser's Pulp Division was a pioneer in hydraulic barking with chain type barkers and among first successful high pressure water jets. Now it uses either the so-called Bellingham "cradle type" barker or the Hansel Ring Barker for all sawmills.

At Enumclaw, Wash., some 30 miles southeast of Seattle, a new barker-chipper installation was made in the summer of 1953. It has a "Bellingham" type hydraulic barker, two 72-in. chippers, and a heavy-duty chip shaker screen. Chips are "hot-loaded" into the specially designed rail cars and shipped direct to the unloading station at Everett.

Sawmills at Snoqualmie Falls and Everett also contain extensive Sumner Iron Works barking and chipping machinery but the Enumclaw set-up is newest and most modern. The barker there takes logs up to 42 ft. and of any diameter. A force of 1400 psi is provided by a Bingham pump powered by a 900 hp Westinghouse electric motor and capable of delivering water at a rate of 900 gpm. This barker does such a thorough job that small logs, which would have been left in the woods not too long ago, now provide a few boards as well as considerable volume of chips.

This is the first barker nozzle mechanism to eliminate flexible hoses. The nozzle can be automatically positioned anywhere above the rotating log. Western Gear drives and General Electric motors drive nozzle carriage on rails at variable speeds and also drive the log trunion rolls.

So much waste wood is diverted by this barking and chipping process at the big sawmills that very little leftover wood is available for power boilers, and fuel oil is required in increasing quantities at Everett.

The longest single unit of the extraordinary overhead conveyor line for chips is from sawmill B and is 4,500 ft. long. It crosses under Pacific Highway No. 99 and over three transcontinental railroads. There is a side line pickup from another smaller sawmill—Mill C—alongside the pulp mill. All sections run to and from a central elevated boxed transfer center, one picking up chips from the railroad cars and trucks unloading station, and others carrying them to and from storage silos and to digester building. These are Reynolds Metals corrugated aluminum housed conveyors and walkways 7 ft. wide and 7 ft. high.

Bethlehem Steel supplied 350 tons of steel for the conveyor bridge. Link-Belt supplied the entire mechanism with 45 degree troughing idlers, rolls, pulleys, shafting, chain drives, and backstops. There are 2½ miles of U. S. Rubber cotton-nylon belting, as, of course, carry and return belts are required. The 12 sections travel 450 fpm. They are 42 and 30 in. wide.

Five mammoth concrete and steel chip storage silos hold chips sufficient for two days operation. Link-Belt provided a tripper on the belt above silos, and a revolving 17 ft. diameter



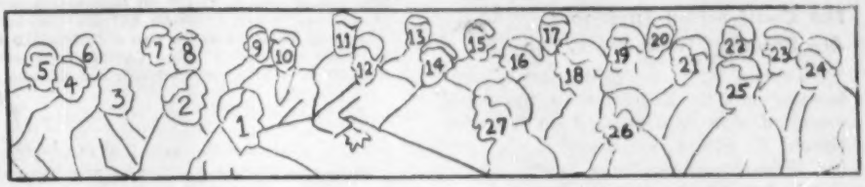


HAROLD BIALKOWSKY (left), Director of Research, Pulp Division, Weyerhaeuser, who directs research for the new mill. EVAN WOOD (right), Personnel and Safety Supervisor for the two mills in Everett, who helped in selecting staff.



A FEW MORE FACES would have given this picture the distinction of being a complete photo record of the newest operating team in the pulp industry. Weyerhaeuser Everett Pulp Mills Manager R. J. LeRoux and Plant Engineer C. L. ("Bill") Cams were unable to pose here for *PULP & PAPER* cameraman.

plate feeder to carry chips off from steel hoppers at bottoms of silos. Push buttons and measuring devices allow plant operators to blend hemlock, fir, white fir or other species of chips from the different silos without ever actually seeing the chips. The belting, longest of its kind in the world, has capacity to carry 250 tons of chips per hour.



KEY to identification: chart gives numbers of Weyerhaeuser personnel in picture at top, which match listing below.

"Greatest Thing About a Mill"—People

WHILE A PULP MILL would not exist without its machinery, buildings and thousands of items of equipment that go into it, by the same token the mill could not be built or operated without people. It is the human side of Weyerhaeuser's new kraft mill at Everett that in many ways surpasses the wonders of the physical plant.

Editors of PULP & PAPER have talked with everybody from Weyerhaeuser Pulp Division Manager and company Vice President Howard Morgan on down to the hourly shift personnel right on the job. An air of pride, competence and confidence exudes from everyone. Every man, high or low on the ladder, believes his own contribution is highly necessary to manufacture of quality pulp.



Builder—

GERALD F. ALCORN, Construction Engineer, Pulp Div., Weyerhaeuser, in charge of engineering and construction. This is new picture of him, taken by *PULP & PAPER* at Montreal Engineering Conference.

It was a dramatic moment when Superintendent L. G. Willins held up a handful of quality pulp and said, "We did it!" Though impressed with machines, Mr. Willins still has this to say: "The greatest thing about the plant is *our people.*"

Mr. Willins is a 1940 graduate of the University of Maine in chemical engineering. He served as assistant superintendent of West Virginia Pulp & Paper's

These are the people who make the new mill a success—and their comments

1—ROBERT A. WATSON, shift engineer. Former shift engineer at Weyerhaeuser sulfite mill, Everett.—"A great deal of thought went into the arrangement of the power plant equipment to make centralized control a reality."

2—R. M. INKSTER, purchasing agent for Weyerhaeuser's Everett operations, both lumber and pulp.—"We purchased materials, motors, gauges, dials and more kinds of pipe and electric wiring than I ever knew existed, from all parts of the country."

3—L. G. WILLINS, superintendent, proud of his team, says, "The greatest thing about our plant is our people." He is former assistant superintendent at Longview kraft and prior to that was with Oxford Paper Co.

4—DONALD P. McPHEE, office manager for both Everett pulp mills.—"It has been a wonderful experience to participate in this fine new mill. It is a real thrill to see the carloads of bleached kraft leaving Everett."

5—H. B. "BEN" CRAWFORD, shift foreman. Former cook at Everett sulfite.—"Our job is a real pleasure with all new equipment and a hand-picked crew."

6—ROBERT C. ACHZIGER, shift engineer. Former fireman at Weyerhaeuser Longview pulp mills.

7—WILLIAM J. HALL, shift foreman. Former shift foreman, Weyerhaeuser's Springfield, Ore., kraft mill.—"The ease and rapidity of the mill start-up is due in large part to a good crew that worked hard and conscientiously."

8—CHARLES J. SAUNDERS, accounting superviser.—"It is interesting to compile construction and operation costs for a new mill."

9—DENIS R. AXON, shift foreman.—"It was a wonderful start-up."

10—JOHN M. McEWEN, technical director. Former technical director, Everett sulfite.—"Quality of our pulp is checked many times every hour in every department. Every man is a technical control man."

11—LEN S. BLOFELD, shift engineer. Former shift engineer, Everett sulfite.

12—W. E. HUNDEN, superintendent of power and recovery. Formerly of Longview power station.—"We have a beautiful power station here."

13—GUS O. OLSON, storekeeper. Formerly accounting department, Everett sulfite.—"A very cooperative organization."

14—VICTOR J. ANDERSEN, head instrument man. Former asst. instrument engineer, Longview pulp.

15—H. E. BAILEY, chartroom foreman. Former field engineer with L. H. Hoffman Construction Co., general contractors for new mill.

16—HAROLD J. MULLEN, machine and shipping foreman. Former machine tender, Everett sulfite.

17—ROBERT M. LARSON, shipping and unloading foreman. Former material clerk, L. H. Hoffman, general contractor.—"A most efficient and congenial organization."

18—GEORGE A. HANSEN, chief chemist. Former project chemist at Springfield kraft.—"Compact arrangement of the mill makes technical control easy."

19—NUELL C. GILLESPIE, maintenance foreman. Former millwright at Everett sulfite.

20—REX A. SWANSON, electrical foreman. Former assistant chief electrician, Longview pulp.

21—H. B. LEEDLE, maintenance foreman. Former general piping foreman, Mechanical Constructors.

22—NORMAN H. RAYNER, chief electrician, who has 27 years experience in his line.—"This plant is really well equipped electrically. Best I've ever seen."

23—O. KENNETH CHAPMAN, tour foreman. Former tour foreman, Longview pulp.

24—ARTHUR L. HARDING, assistant personnel manager. Former personnel clerk at company's Coos Bay, Ore., sawmill branch.—"It is a pleasure to be associated with the personnel of the new mill."

25—ARTHUR A. RINTA, maintenance superintendent. Former master mechanic, Springfield.—"I just lost all track of time during construction and start-up."

26—EUGENE M. KEENE, shift engineer. Former red liquor foreman, Longview pulp.

27—MERRILL D. ROBISON, project engineer. Former construction engineer under Gerry F. Alcorn.—"Construction of this mill represents the finest cooperative effort I have seen."

kraft mill in Williamsburg, Pa., then became Chicago district labor relations officer for the Army's Chemical Warfare Service. After the war he joined Oxford Paper Co., Rumford, Maine, where he did pulping research before becoming technical superintendent and assistant operating superintendent of Oxford's kraft mill. He joined Weyerhaeuser in 1952 as assistant superintendent at the Longview kraft mill.

Mr. Willins is supported by what one official called "a hand-picked crew." *Everyone* in the Weyerhaeuser organization had a chance to move up.

"We think that all the time and interest we took in hiring the people has paid off all around," said Mr. Willins.

Harold Bialkowsky, the research director of the Pulp Division, will have charge of the development and research at this new plant.

The Construction Engineers Are Proud of Their Roles, Too

No group is prouder of the new Weyerhaeuser mill in Everett than the small group of men who worked on it under Gerald F. Alcorn, construction engineer for Weyerhaeuser's Pulp Division, and watched it rise from the site that was a swamp.

Claude L. Fargo, structural engineer, said: "It's been a highball job and it hardly seems possible to have accomplished what we have with the small engineering staff we have."

C. L. "Bill" Carns, who was assistant to Mr. Alcorn during construction, stayed on at the new plant as plant superintendent. Other engineers who remain on Mr. Carn's staff are Merrill Robison, Donald K. Wooden and Harold M. Semple. Electrical engineer during construction, Norman H. Rayner has stayed on as chief electrician.

Gone to be with Mr. Alcorn in Longview engineering offices is E. T. Porter, chemical engineer.

Everett sulfite mill loaned two of its regular engineers to Mr. Alcorn: Larry H. Ziebell and Wallace L. Bailey. The former concentrated on structural and mechanical engineering and the latter on mechanical. They returned to the sulfite plant.

Mr. Fargo worked on construction of all Weyerhaeuser pulp mills except the original at Longview. He originated the use of concrete chip silos for the pulp industry and the 45-degree chip conveyor belt. He was long associated with Otto C. Schoenwerk.



THEY KEPT AHEAD OF CONTRACTORS

HERE ARE ENGINEERS who served under GERALD F. ALCORN in engineering and construction of new mill. In middle of group at left is C. L. "BILL" CARNS, now Plant Engineer of new mill. L. to r., they are: MERRILL ROBISON (at table)—(specialty: piping); behind him, NORMAN RAYNER (electrical), now Chief Electrician at the new mill; DONALD K. WOODEN (structural); Mr. CARNS (structural); HAROLD M. SEMPLE (architectural); and CLAUDE L. FARGO (structural). Messrs. ROBISON, WOODEN and SEMPLE have stayed on as Project Engineers. All except Mr. Rayner are "alumni" of Weyerhaeuser's Longview pulp branch.
TWO OTHERS at right were loaned from Weyerhaeuser sulfite mill in Everett, where they have returned: LARRY ZIEBELL (left) and WALLACE BAILEY. Not shown is E. T. PORTER, Chemical Engineer, now working out of company headquarters.

Pulping is Grouped; Uses New Instruments

AN EFFICIENT LAYOUT for the so-called Pulping Group provides easy operation and wide visibility. The operating floor for digesters is within a few steps of, and is visible to, a central operating floor running between bleach plant washers on one side and deknotters, brown stock washers and thickener on the other.

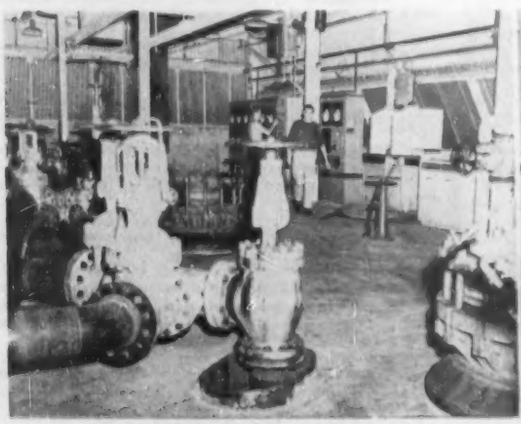
The six digesters, 12 ft. 3 in. inner diameter steel shell by 54 ft. overall height, were built by Chicago Bridge and have 5 in. carbon brick linings installed by Stebbins Engineering Corp. Each digester is charged with 55 tons of chips for a 3½ hour cooking cycle. A Link-Belt self-propelled tripper is on the belt carrying chips to digesters.

Panzl type top relief strainers are used. Electric Steel Foundry Co. provided circulating and indirect heating systems, digester relief strainers, relief condenser and top and bottom neck liners and internal fittings of stainless steel for the digesters. Also, Esco supplied a 470 sq. ft. relief gas condenser, having tubes and tube sheets of 18-8 stainless steel. Ohio Injector Co. provided large liquor charging valves for the digesters and Foxboro's controls and recorders include main steam instruments and liquor charge measuring. This operating floor is 60 ft. above ground. The entire "pulping group" structure is 72 x 120 ft. in area covered.

Consolidated Western Steel Division of U. S. Steel fabricated the blow tank and black and white liquor storage and measuring tanks serving this pulp mill at its South San Francisco plant and also erected them. It supplied 41 tanks in all for the mill, weighing 1,368 tons.

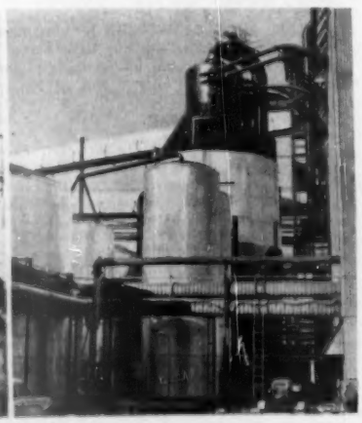
Operating floor for bleaching and washing is on the same level and adjacent to digester operating floor. A common walkway runs between bleaching washers on one side and brown stock washers on the other, as has been mentioned.

Bleaching procedure is as follows: 1st stage, chlorine; 2nd, caustic; 3rd, hypochlorite; 4th, caustic again; 5th, hypochlorite again; and 6th, acid soak. Only the second hypo stage is by batch system and all others are continuous stages. Improved Machinery provided washers—all 16 ft. long and 8 to 11½ ft. diameter. Continu-



LOAD AND OPERATE DIGESTERS HERE

SIXTY FT. ABOVE ground, here are Foxboro controls, big Ohio injector liquor charging valves. Stebbins lined 6 big digesters with 5 in. carbon brick, and Panzl top relief strainers and Esco circulation and indirect heat systems are provided.

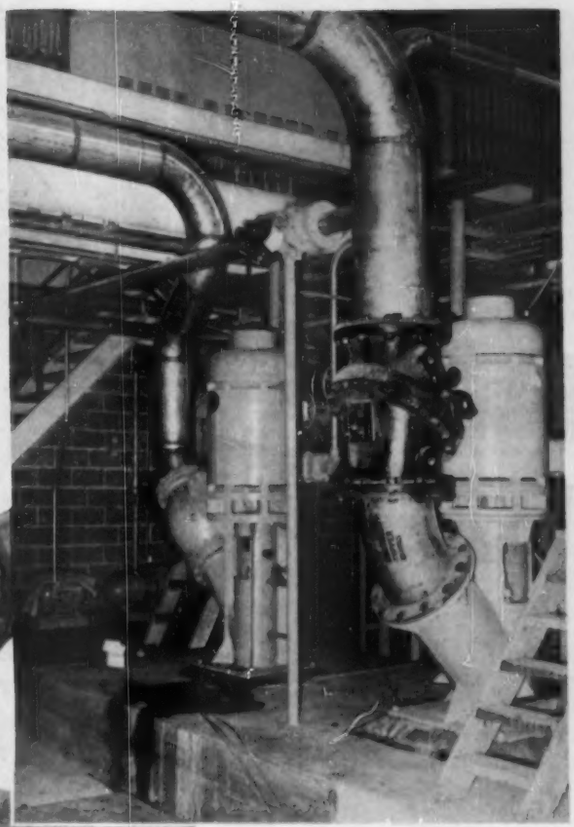


THAR SHE BLOWS!

BLOW TANK with black top with black liquor and white liquor measuring and storage tanks in this picture were fabricated by Consolidated Western Steel Division of U.S. Steel in South San Francisco. It supplied 41 tanks in all and erected them.



An installation of a Northwest Copper screw-down Check Valve at new plant.



Stainless Steel full flow die formed elbows and piping by Northwest Copper.

Best Wishes to WEYERHAEUSER TIMBER CO.

Everett, Washington • New Kraft Mill

Stainless Steel Pipe, Fittings, Tanks, Special Fabrications, Check Valves furnished by the Northwest Copper Works, Inc. were used extensively in critical spots throughout the processing system.

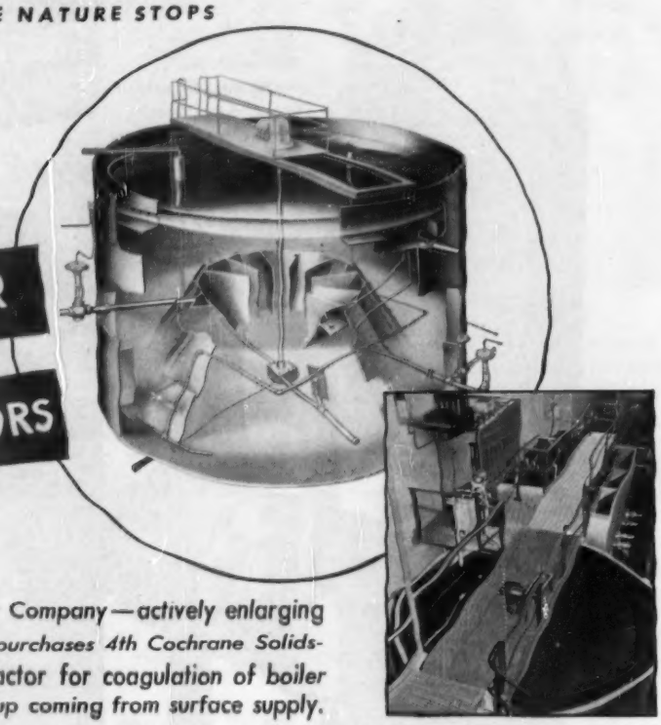


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COCHRANE WATER CONDITIONING
STARTS WHERE NATURE STOPS

REPEAT ORDERS FOR COCHRANE REACTORS



Duke Power Company—actively enlarging capacity—purchases 4th Cochrane Solids-Contact Reactor for coagulation of boiler feed make-up coming from surface supply.

• This record of repeat orders is evidence of successful design and performance. Units are being built for coagulation, lime softening, iron removal, fluoride removal, white water recovery in paper mills, cooling water treatment, process water clarification, tin plate rinse water, oil field flooding water and similar applications.

They can be built in small sizes—such as for the bottling trade, or in very large sizes—such as for paper mills, up to 110'0" dia., capable of handling more than 20,000,000 GPD in a single unit.

Write for new Solids-Contact Reactor Catalog—Publication 5001-A —just off the press.

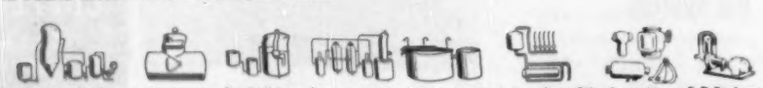
COCHRANE CORPORATION WATER ENGINEERS FOR 91 YEARS 1863-1954

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In Canada: Canadian General Electric Co., Ltd., Toronto
In Mexico: Babcock & Wilcox de Mexico, S.A., Mexico City
In Europe: Recuperation Thermique & Epuration, Paris
In Cuba: Laurence E. Daniel, Inc., Havana
In South America: Servicios Electricos, C.A. (S.E.C.A.) Caracas, Venezuela
In Puerto Rico: F. A. Ortiz & Co., San Juan 5



Hot Process Softeners • Deaerators • Dealkalizers • Demineralizers • Reactors • Continuous Blow-Off • Specialties • C-B Systems

ous caustic and hypo stages equipment and mixers are by Impco. A Sandy Hill Kamyr type chlorination tower is used. James Brinkley Co. provided eight bleach engines, drives, agitators, etc., as well as a number of agitators for other installations, including storage and other chests. They supplied a track mounted digester feeding device with telescoping spout and air operated lid lifter.

On the brown stock washing side—paralleling bleachers—are, in order, one Impco deknotter, then three Impco brown stock washers, 11½ x 16 ft. each, followed by a thickener. There are only 12 feet between this lineup and the washers for bleaching on the other side, with all instruments in this central corridor. This is all on a floor surface of about 7,000 sq. ft.

After cooking in the digester, the stock goes to blow tank, then deknotter, then brown stock washers, then downstairs to a battery of six Lindblad type screens—Swedish type screens with small compact units of 50 tons capacity each. These act as primary screens. There are four Impco secondary 14-plate flat screens and two 14-plate tertiary flat screens with scrapers.

After screening, stock goes back up to thickener, on operating floor, and then to high density storage ahead of bleaching.

For bleachers and agitators—11 tons each—General Electric motors and Western Gear reducers are used. On washers is a new type of drive. Each has a GE 25 hp induction motor, driving through a Dynamatic water-cooled Eddy current clutch, which in turn drives through a Western Gear reducer and worm gear above a big ring gear on the washer. It was selected as an inexpensive means of getting variable speed drive, with standard induction motor.

The only Impco stainless steel washer in the entire pulping group plant is the 6th and final stage of bleaching. Others are rubber-covered steel drums. There are nine Taylor Flexitimers for automatically opening and dumping gates of the batch bleach cells.

The tile vats for the five bleach plant washers were constructed as a continuous unit by Stebbins Engineering Corp. The reaction towers, stock tanks, bleach cells, bleacher dump chest, wire pit and couch pit were all tile-lined by Stebbins for cleanliness and quality of finished pulp.



WASHING SET-UP NOT COMPLETE

UNUSUAL PICTURE shows tile vats for 5 bleach washers constructed as continuous unit by Stebbins. Paralleling them in background are bed for Impco deknotter at right, with three Impco brown stock washers and thickener to left.



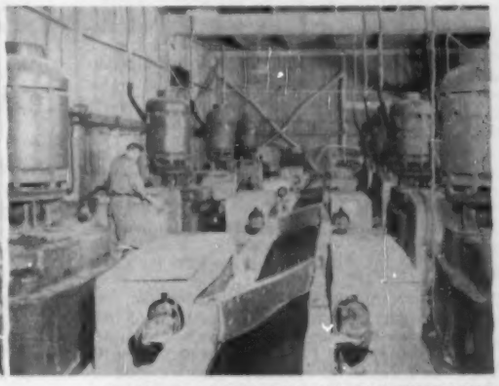
AND HERE IT IS COMPLETED

BLEACH WASHERS are on the left, deknotter, brown stock washers and thickener are on right—just a narrow alley between with operations centralized. Drew Engineering provided single continuous hoods on each side for air and ventilating systems.



HERE BROWN STOCK IS SCREENED

THESE 6 IMPCO LINDBLAD screens are primary for brown stock. Space savers and high intensity screens, low in power needs, they are like a flat screen "rolled up," one engineer says.



BATCH BLEACH ENGINES IN NEW MILL

JAMES BRINKLEY CO., Seattle, supplied the eight bleach engines shown here with agitators, drives, belt conveyor to cells, shear gates and valves in the new bleach plant.

The chlorination tower which is 17 ft. ID by 70 ft. high is located out of doors just south of the bleach plant proper and is insulated with Fiberglas and corrugated aluminum as an aid in the control of the reaction temperature within the vessel. There are three low density and two high density stock tanks each 28 ft. ID by 45 ft. high. These are both for brown stock and bleached stock.

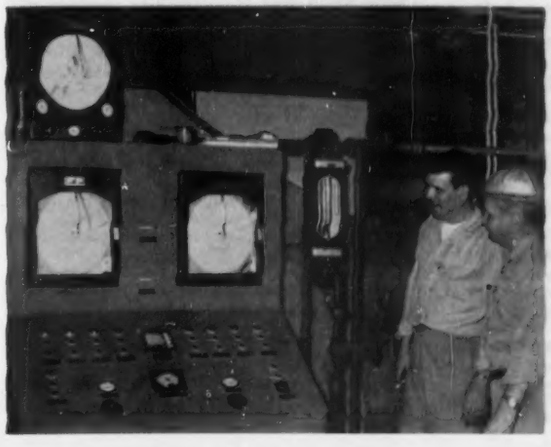
Fischer & Porter Co. supplied what is believed the first commercial installation of a new automatic brightness control system in the bleach plant. Novel and new types of graphic panels for screening, washing and bleaching came from Minneapolis-Honeywell. And "Panalarms," new instruments by Panellit Co., warn of any interruption of processes here.

Minneapolis-Honeywell was asked for instruments near the equipment on operating floor. Space limitations required graphic-type systems on small enclosed cubicles.

Cubicles are of console type in most cases, with Honeywell "Tel-O-Set" instruments and electrical controls on sloping face. Where conventional sized instruments are used, a vertical raised section is added to the console. By use of console type panels, equipment is mounted at convenient operating level, but at the same time, the operator is permitted a clear view of the mill equipment. One interesting Honeywell panel is for brown stock thickener and the entire screen room set-up below it.

"Tel-O-Set" instruments and control systems for pulp washing measure variables including blow and knot tank levels, blow tank dilution, stock valve position, filtrate tank levels, shower flows and hot water flow. A Honeywell batch Typo-Stage console in bleach plant records and controls the bleach liquor flow, and "Tel-O-Set" instruments are used for dump chest level, hypo mixer temperature control, and stock recirculating valve positions. Controls for washers are also on the console face. A Honeywell 6-Record Potentiometer, mounted on the vertical portion of the console, records readings of 6 pH electrode assemblies in the bleach plant.

Flow of buffer, liquid bleaches and pH control additives are measured on conventional



***NEW INSTRUMENTS* MAKE BOW**

FISCHER & PORTER CO. supplied what is believed first commercial installation of new automatic brightness control in bleaching and Minneapolis Honeywell made new types of graphic panels. ROGER WILLIAMS, left, Bleacherman, and DENIS AXON, Shift Supt., in safety hat, check Fischer & Porter Flowrator (just left of Mr. Williams) with Fischer & Porter chlorine and stock flow controls on main panel. Top control is Honeywell.

Fischer & Porter Flowrater Indicators. However, addition of chlorine gas is handled on an automatic flow proportioning basis wherein entire flow of 3 percent unbleached kraft stock to the bleach plant is measured under pressure by a Fischer & Porter streamlined stock Ratosleve which transmits pneumatically to the master panel board. This meter has a usable linear flow range of 2200 U.S. gpm maximum to 200 U.S. gpm minimum corresponding to 400 tons per 24 hours maximum to 36 tons per 24 hours minimum. A gas Flowrator in the chlorine line also sends a pneumatic signal to bleach panel and main panel. This Flowrator transmitter has a usable linear flow range of 40 ppm maximum to 4 ppm minimum. Both stock and chlorine gas flow signals record on a single chart in a control instrument equipped with a chlorine to stock flow ratio or chlorine additive dial. The control maintains a constant amount of chlorine addition per ton of stock regardless of stock flow variations through the bleach plant. The amount per ton can be changed by resetting the chlorine to stock dial manually or a brightness detection signal could reposition the dial as a function of brightness or residual.

Chlorine is supplied by Hooker Electrochemical Co. in 55-ton tank cars and the chlorine system was designed by Hooker engineers. Liquid chlorine is piped from cars at the double-track, four-car unloading station to a control station above the bleach liquor reaction tanks. From here it may be sent to the water treatment plant for evaporation followed by application through the Wallace & Tiernan chlorinators.

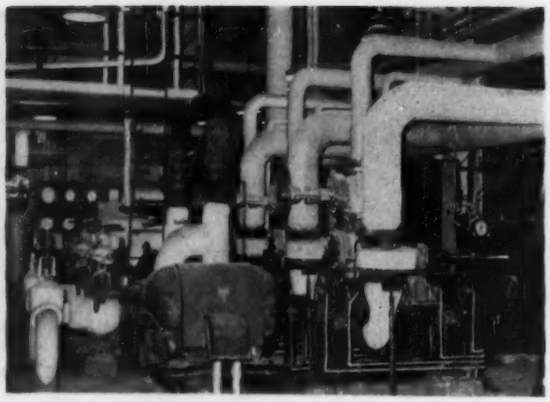
Liquid chlorine is used for preparation of calcium hypochlorite bleach liquor in five 24,000 gal. concrete tanks. After settling, clear bleach liquor is decanted into four 48,000 gal. concrete storage tanks below and supporting reaction tanks.

Chlorine for direct application to pulp is first vaporized in either of two Hooker Type C-20 evaporators equipped with automatic temperature and gas pressure control. Flow is metered by a Fischer & Porter Flowrater as has been described. Located in the chlorine system control panel is a Panalarm system to give warning of low temperature, low pressure, or operation of the shut-off valve. No chlorine enters the bleach plant building.

Drew Engineering provided heating and ventilating requirements for the pulping group. This consists of a single large unit to supply screen room and pulp washer operating floor, a unit for heating and ventilating and laboratory and a supply unit to pressurize the transformer vault cubicles.

Continuous hoods over the full length of both bleach washers and brown stock washers were installed by Drew. Exhaust from both hoods is handled by vertical units mounted on the roof. Both hoods are constructed to allow easy removal of side panels so any one washer may be removed without dismantling the entire hood.

Construction of the batch bleach cells is such that the cellular space between the cells constitutes a plenum with an opening to each bleach cell. The cell exhaust is handled by a single Transite housed exhauster. The bleach liquor-making tanks are provided with an exhaust system to collect any residual chlorine from the top of tanks. Fumes are conveyed through Transite ducts and exhausted by a specially treated steel plate fan.



SUPPLIES BOILER FEED WATER

GENERAL ELECTRIC motor powers Bingham pump in foreground, and behind are two General Electric steam turbines. William Powell Co. gate valves operate on smaller discharge pipe and Crane Co. suction valves on the larger infeed pipes. Two Cochrane relief valves are shown at top of installation.

Simplicity Marks Power-Recovery Group

THE BASIC IDEA of grouping related operations and functions, for convenience of operation, is carried out to the highest degree in the power and recovery "group." It is obvious the designer had the firm conviction that an efficient, well-coordinated group need not be complicated nor full of frills.

Most noteworthy is that within a radius of 50 ft. from a central point on the common operating floor, all major functions of operation and control—electrical generating, steam producing, chemical recovery, liquid evaporation, dissolving and chemical make-up—can be observed and controlled. Careful planning becomes more evident when it is realized all controls and all major portions of this plant requiring close attention are on this operating floor.

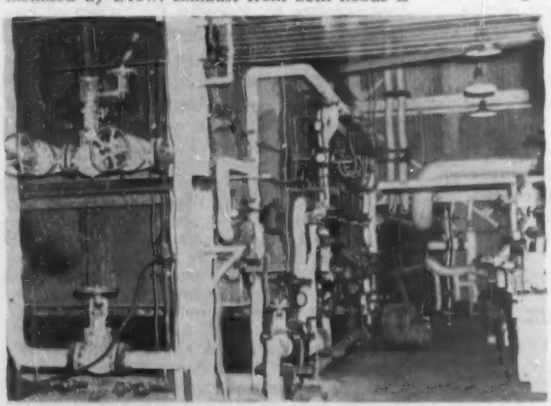
This building is 110 ft. high and has eight floors, with concentration of controls on one.

The operating level of the recovery boiler, which is 25 ft. above the ground floor, established the elevation of operating floors for all other equipment. Consequently, suitable changes to the foundations and supports of other equipment were made so power boiler oil burners, boiler feed pumps, fuel oil pumping and heating set, two turbine generator units, electrical switch gear, turbine control boards, power boiler combustion control boards, recovery boiler combustion control boards, evaporator control boards, salt cake mix tank, ash dissolving tank, are all located on this operating floor. Items requiring less attention are on the ground floor, on intermediate floor or at upper levels.

This care in location has paid off in efficient operation with minimum manpower. Cooperating closely with Weyerhaeuser engineers were engineers of C. C. Moore & Co., which represents Babcock & Wilcox in the Far West.

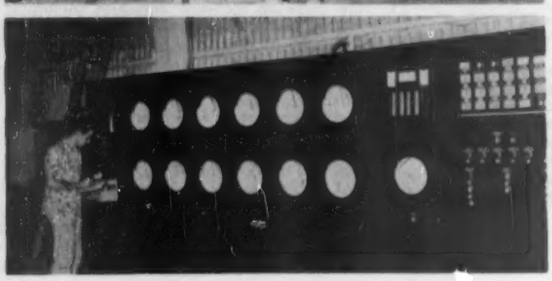
A detailed economic study of long term power contracts offered by publicly owned utility districts indicated electric power generation was economically feasible and in addition to being a money-making proposition would give the mill a measure of independence and relief from the power shortages that have plagued Pacific Northwest industries periodically.

Heat balance studies reveal that 600 psig, 715 degrees was the proper initial turbine steam condition considering extraction of digester steam at 140 psig and evaporator, bleaching, and machine room steam at 40 psig. Based on this, one 5,000 kw turbine generator unit extracting at 150 psig and exhausting at 40 psig and one 7,500 kw turbine generator unit extracting 40 psig and condensing, both by Westinghouse, provided turbine generator units. Electricity is generated at 13,800 volts 3 phase 60 cycle and distributed to major sub-stations at 13,800 volts. Controls and indicators are by Bailey Meter, Honeywell and Foxboro and a new feature in the turbine room is the use of "Panalarms," a Panellit product.



POWER BY BURNING OIL

BABCOCK & WILCOX supplied this 150,000 lbs. p.h. oil fired Power Boiler, as well as the Recovery Boiler. This is on operating level of compactly located Power-Recovery Group. C. C. Moore & Co., Engineers, made installation. More oil is burned in west as wood waste becomes scarce.



MORE NEW INSTRUMENTATION IS USED

HERE IS AUXILIARY flow meter board in turbine room showing new Panalarms, developed by one of the Panellit companies of Chicago, to signal if any step in process goes awry. Bailey Meter, Honeywell and Foxboro supplied turbine room instruments. Honeywell indicators are in two rows of six each here, with Foxboro indicator at lower right.

Power boiler Bailey combustion control automatically maintains steam pressure, furnace draft, and fuel-air ratio with a conventional pneumatically operated system. Recovery boiler Bailey control automatically maintains a selected total air flow, primary air-total air ratio, and furnace draft. The control system is pneumatically operated. Honeywell accounting meters in power plant measure various steam flows.

Black liquor preparation is accomplished in a sextuple effect six body vertical film evaporator system furnished by the James P. Rubush Evaporator Co. of Wenatchee, Wash., and fabricated by Hydraulic Supply Mfg. Co. of Seattle. First and second effects have stainless steel tubes and clad tube sheets whereas the remainder have mild steel tubes. Evaporators have a rated capacity of 350 tons of pulp per day, and are equipped with a Cochrane CB condensate return system.

Vessels are about 12 ft. in diameter at vapor chamber, 45 ft. high and weigh approximately 48 tons each. Each consists of a long tubular heating element designed for passage of liquor through tubes. Steam enters through a vapor belt and the bundle is baffled so that there is free movement of steam, condensate and noncondensible downward. The upper tube sheet is free and above it there is a vapor deflector to reduce entrainment.

Transporting the evaporator from Seattle presented a problem. Units were too large to go through a railway tunnel and therefore had to be moved by two trailers attached to a truck. Once the trailers were pulled apart when the truck stalled on a grade in Seattle. The load shifted and it had to be jacked up to allow realignment. Police and city engineers came to the rescue. But one of four lanes of traffic was blocked for miles for six hours.

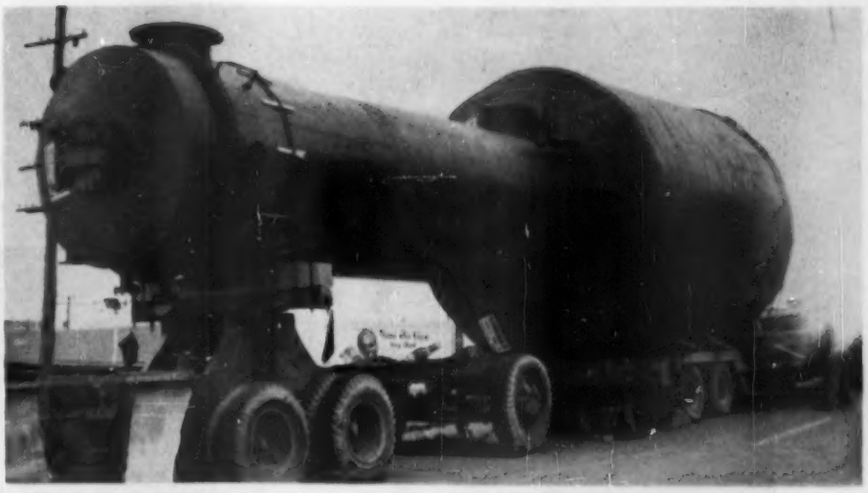
The black liquor recovery unit is a Babcock & Wilcox 350 ton per day Tomlinson unit (630 lbs. pressure; 165,000 pph steam capacity). This unit is conservatively designed to provide maximum chemical recovery and minimum steam production. Complete instrumentation, primary, secondary air ratio and constant volume air flow controllers are included for assisting in stabilizing furnace operation. Diamond Power Specialty equipment uses steam on retractible blowers to reduce hand lancing to a negligible amount. It is interesting that a B&W cyclone evaporator has been used as a direct heat evaporator, largest cyclone evaporator on the Pacific Coast. Final recovery of salt cake is accomplished in a Western Precipitation Cottrell unit.

Salt cake handling from cars to storage, or direct to process bin, or from storage silo to process bin, is by a Holly pneumatic conveying system consisting of 6 in. portable suction nozzle, flexible metal hose and conveying pipe into a filter recipient by vacuum.

Unique feature of a Custodis 275 ft. high by 12 ft. ID reinforced concrete stack is inclusion of salt cake storage of 400 tons capacity in the base of the stack. The breeching opening from the Cottrell precipitator is at an elevation of 100 ft. The remaining space inside of the stack has been utilized to support the evacuator mechanism and to provide a cylindrical storage with a hopper bottom for removal of salt cake. The stack is lined to the top with acid proof brick. It has capacity for 700,000 lbs. of flue gases per hour at 300 degrees F. It rests on a massive concrete foundation supported by 476 piles. Here, as elsewhere, seismic factors were included in the design as a precaution against earthquakes.

To provide supplemental steam for power generation and mill use, a power boiler of 150,000 pph steam capacity was furnished by Babcock & Wilcox. Boiler is complete with B & W oil burners, soot blowers, Clarage fans, and B & W air heater.

Among power plant auxiliaries are Bingham boiler feed pumps with General Electric steam turbine drives, Cochrane deaerating feed water heater, fuel oil pumping and heating set, Worthington black liquor pumps, hydraulic couplings, Bailey Meter combustion control, and ion exchangers and water softeners. One liquor pump handles liquids of 10,000 S.S.U. viscosity. There are four DeLaval Imo pumps here on fuel oil. Typical of the changing West, there is no waste wood to burn—only oil and liquor. Oil is received by barges.



These are the Work Areas

On operating floor (elevation 25 ft.) there is the control area for turbine generators, switch gear and electrical distribution system, evaporators, salt cake addition, liquor preparation, recovery boiler control and operation, power boiler control and operation, fuel oil pumping and heating, evaporator control and feed water controls.

The basement floor area includes the water softener, air compressors, feed water booster pumps, dissolving tank, electrical load center, condensate and liquor pumps, all requiring less attention. Other items requiring only casual inspection or attention are on upper levels, such as the Cottrell precipitator, recovery boiler fans, deaerating feed water-heater and automatic sequential blowers for power and recovery boilers.

Recausticizing Plant of Outdoor Type

Virtually a standard Dorr recausticizing system has been installed, but it is of the outdoor type, which differs from plants in the East. It consists of two Dorrco slakers, three Dorrco causticizers, white liquor clarifier, lime mud washer, green liquor clarifier, dregs washer, agitators and necessary pumping equipment. Dorrco pumps are generally used, and some were DeLaval, and motors were by Louis Allis. Lime kiln is 9 ft. by 275 ft. long, one of the longest in kraft, by Traylor. Lime conveyors include water cooled hot lime drag conveyors and vibrating pan conveyors. Slaked lime for bleach liquor making is prepared here.

THIS BLOCKED SEATTLE TRAFFIC 6 HOURS!

THERE WAS DRAMA in building new mill when this section of 6-body James P. Rubush-designed evaporator, built by Hydraulic Supply Co., was being trucked to Everett on two trailers. The trailers pulled apart on a grade. It was 6-hr. job realigning load.

Unusual is a Link-Belt system for handling and cooling hot lime from kiln discharge to storage and to slaker. Lime is discharged into the bottom run of a 66 ft. inclined rivetless chain drag conveyor with heavy duty cast flights operating in a waterjacket completely enclosed housing with white iron wear strips. The flight conveyor discharges into a dust-tight bucket elevator which discharges into storage tanks. Under these are gates discharging into a unique, totally enclosed reciprocating feeder unit operated from outside through a Link-Belt enclosed PIV transmission, crank, connecting rod and jackshaft extending inside to actuate the feeder plate. Feeder units discharge lime through a dust boot to oscillating Link-Belt enclosed Flexmount conveyors which discharge into slakers.

Holly Pneumatic Systems equipment supplied by R. E. Chase & Co., including suction nozzle, flexible metal hose and conveying pipe, unloads pebble lime from boxcars to two storage silos which are discharged by gravity. Link-Belt supplied 58 ft. centers for handling this pebble lime, also two bucket conveyors for ground lime rock and considerable other lime handling equipment.

Machine is Unique; Finishing Automatic

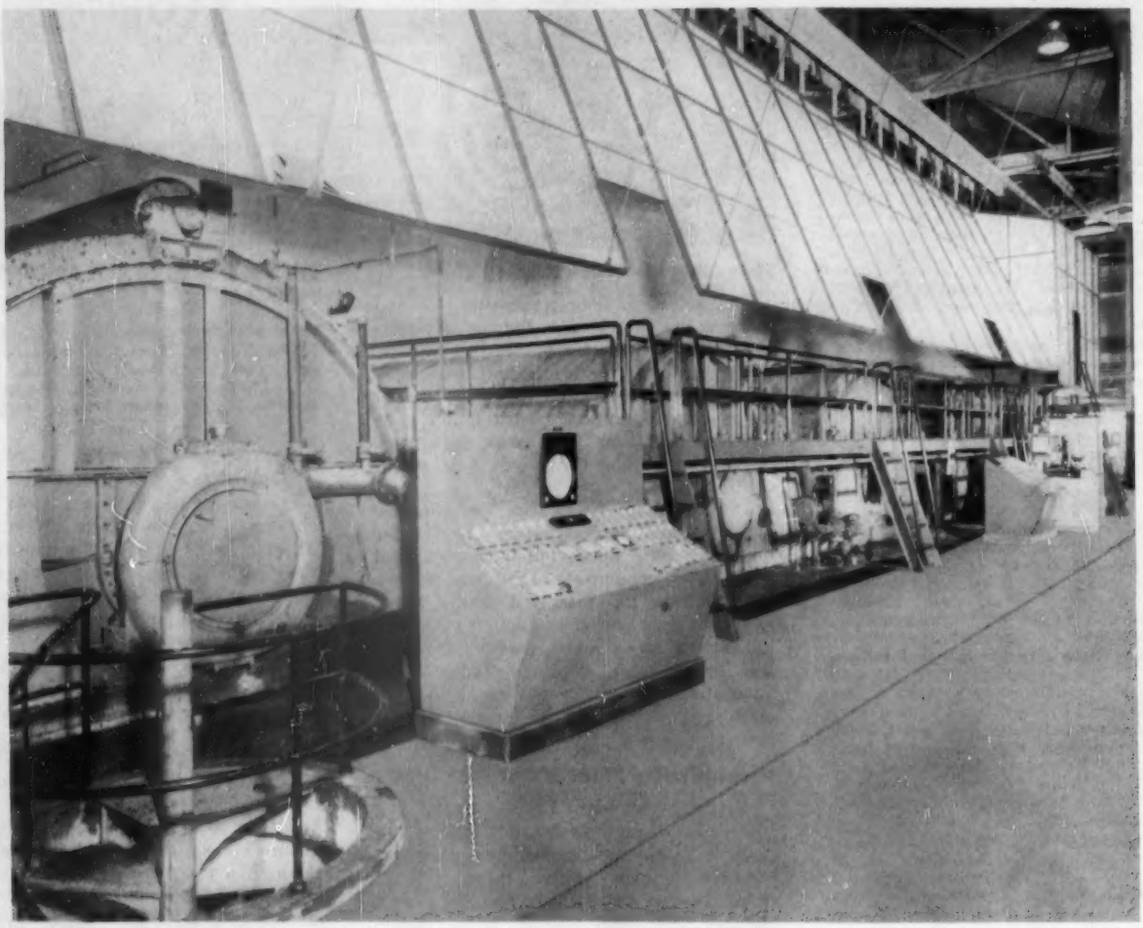
THE MACHINE ROOM is 60 by 380 ft. long and paralleling it is a warehouse for pulp storage and a well-equipped machine shop and stores section.

Ahead of wet end is a battery of six Impco Lindblad screens for handling bleached kraft stock as it arrives from the pulp mill. Ahead of headbox are three Bingham pumps with vertical General Electric induction motors and there is extensive use of stainless steel fabricated by Northwest Copper Co. and Alaska Copper & Brass Co. The fan pump is 7,000 gpm capacity and 50 hp motor. A pump circulating water back into the system is of 3,500 gpm capacity and 50 hp motor. A third pumps excess water to white water tanks at 1,500 gpm and has a 60 hp drive.

First Minton pulp dryer in the Far West was built by Rice Barton for the present Rayonier mill at Port Angeles. Initial Weyerhaeuser installation was in 1930 at Longview, followed by a second in 1935 at Everett, a third in 1950 in Longview, and now this fourth one in 1953.

Most noticeable at first glance at this

BROWN STOCK WASHING-



We are happy to have had the opportunity of furnishing these systems and associated equipment for . . .

BLEACH PLANT EQUIPMENT



Weyerhaeuser Timber Company's new 300 ton fully bleached kraft mill at Everett, Washington.

IMPROVED

MACHINERY INC.

NASHUA, NEW HAMPSHIRE

Sherbrooke Machineries Limited, Sherbrooke, Quebec, manufacture similar equipment in Canada.

Everett installation is the space saving factor. The Rice Barton machine itself is credited with unusual high tonnage per dryer and low manpower per ton of pulp.

The Fourdrinier is 156 in. wide with a wire 95 ft. long, designed for maximum speed of 400 fpm. The table section has 52 rubber covered table rolls, 7 wire rolls of centrifugally cast nickel bronze—all rolls having been dynamically balanced on electronic equipment recently installed in Rice Barton shops. The couch roll is 30 in. diameter, of cantilever type. The Fourdrinier is removable with fixed pitch.

First and second presses are of suction type and the third press has plain heavy-duty rolls. All press rolls are hydraulically controlled with a system which provides individually controlled cylinder pressures for maintaining uniform nip pressures across the entire face of the rolls. One interesting feature of the press section is an automatic sheet weighing device built into the press part.

The Minton dryer, which consists of 48 dryers, 60 in. diameter by 152 in. face. Temperature controls on dryers are Foxboro as is also the backtender's control panel.

Driving arrangement consists of Rice Barton double reduction hypoid gear units with a lineshaft being driven by an electric motor.

A 350 hp 450 to 4500 rpm General Electric steam turbine is the prime mover. Turbine and line shaft are on pillow blocks on a mezzanine floor parallel and above the back side of the machine. J. E. Rhoads & Sons leather flat belts are used and sheaves for the drive are also on the mezzanine. This is expected to simplify start-ups and maintenance problems. And it makes for greater safety behind the machine. Drive units have air-operated clutches. Steam flow to turbine is Foxboro-metered.

There are three General Electric 25 hp dc helper assemblies on the machine, for ingoing and outgoing seal rolls and for top roll of the third press section of the Minton dryer. A 25 kw General Electric direct current generator coupled to a right-angle Rice Barton hypoid gear furnishes power to the bottom roll of the dryer section third press and this in turn supplies power to the helper motor there. Drive units are on all sections except motor driven reel.

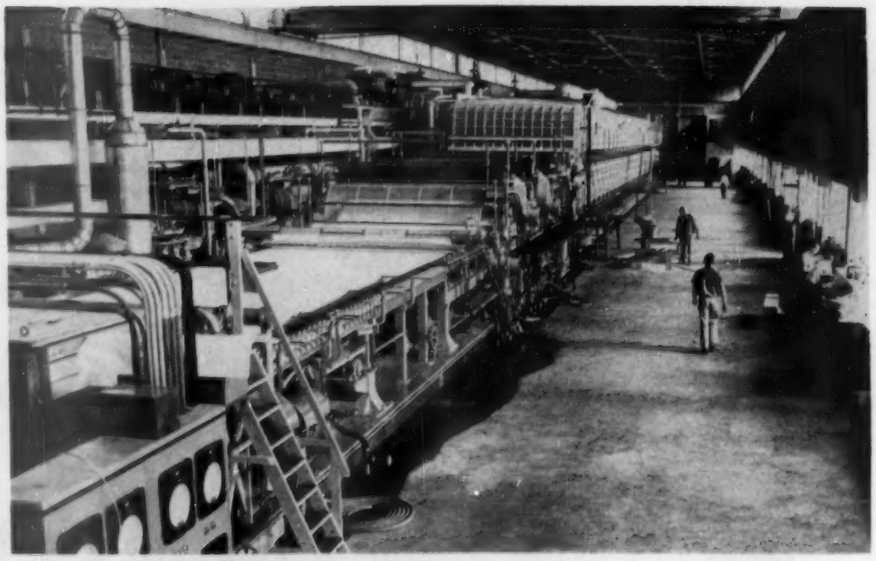
It is interesting how—without a basement—auxiliary equipment was fitted in. A Midwest-Fulton drainage system and equipment is in a 4 ft. deep pit alongside the machine. The oil lubricating equipment is back of the machine. At dry end near machine is a 10 ft. Shartle Bros. broke Hydrapulper. And Nash pumps and drives are tucked in back of the Stebbins tile-lined wire pit and stock chests.

Two complete units supplied by Drew Engineering Co. provide heating and ventilating requirements for the machine room. One large unit outside the building on top of the stock tanks provides ventilating air for wet end roof and side walls. Manual dampers allow the bulk of the air to be diverted in the summertime from the roof to the principal working areas in front of the machine. A second unit on the mezzanine supplies the dry end of the machine room. Thermostatic control for both units automatically maintains minimum temperatures on the machine room floor.

A trim conveying system by Drew Engineering handles heavy trim from the winder. A cycloidal exhauster unit breaks ribbons into short lengths for air conveying, and discharges them directly into the Hydrapulper.

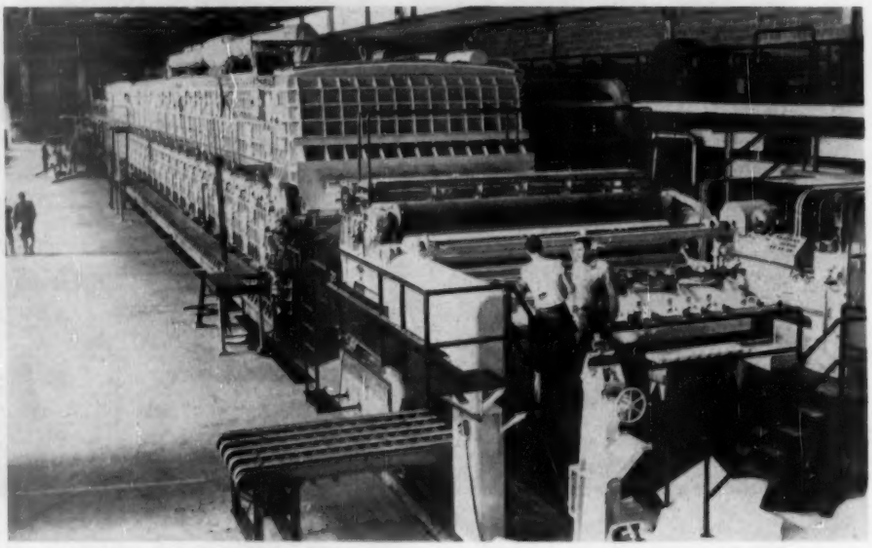
A "package" Drew unit provides complete air conditioning for machine room pulp testing station. This unit is unique in that electronic control, utilizing the new Minneapolis-Honeywell gold leaf sensing element, is used to control the room humidity.

An almost completely automatic finishing end assembly for the pulp was designed by Maurice Candey, affiliated with Lamb Grays Harbor.



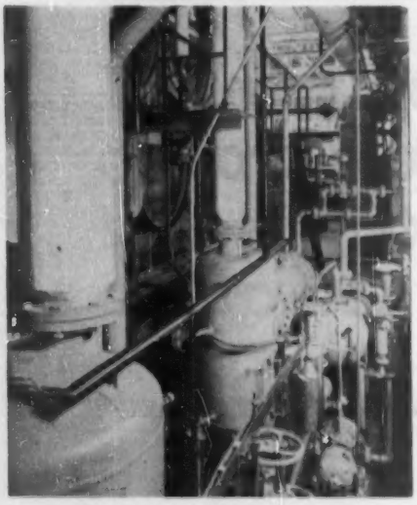
MAKES PREMIUM PULP FROM WASTE

RICE BARTON 156 in. Fourdrinier for pulp production at Everett is at this end and it is hooked up with longest Minton Vacuum Dryer ever built for pulp. Foxboro panel in lower left; line shaft and belt drives in balcony in background. There is no basement.



PULP IS DRIED AND CUT FOR BALING

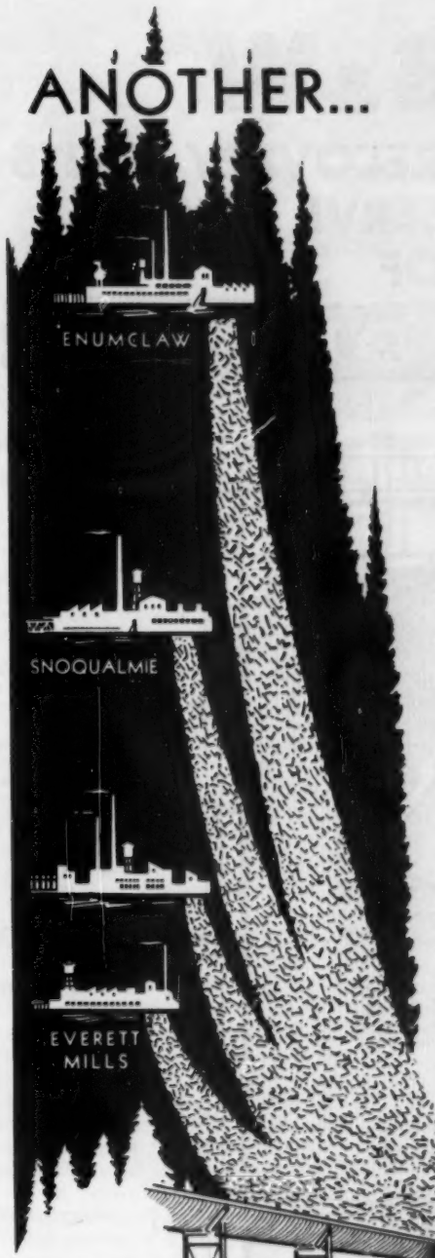
DRY END of pulp machine at Everett with cutter and layboy in action. There are 48 dryers in the total enclosed Minton Vacuum Dryer section. It is easily producing 250 tons a day of high brightness pulp.



PICKED UNUSUAL PLACE FOR THIS

MIDWEST-FULTON Drainage System supplied by James Brinkley Co. for Weyerhaeuser's new pulp drying machine is in a rather unusual spot. There is no basement in this mill, so this is in 4 ft. deep pit alongside backside of the big machine.

ANOTHER... *Weyerhaeuser* ACHIEVEMENT

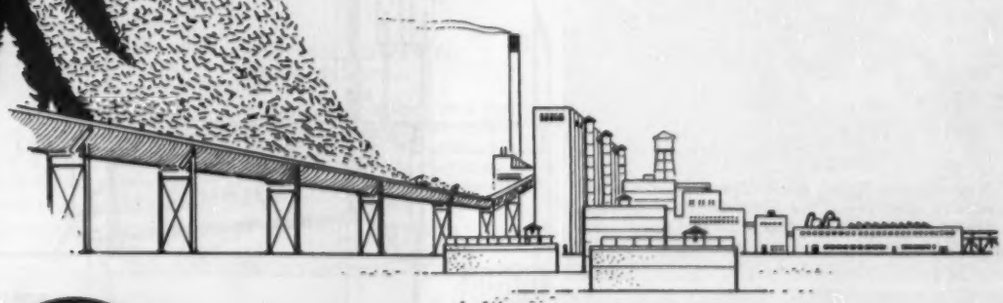


The new Kraft Mill at Everett, Washington manufactures 300 tons of bleached Kraft per day . . . WITHOUT CUTTING A SINGLE EXTRA TREE!

PULP CHIPS

are produced from sawmill left-overs and residuals of Weyerhaeuser mills in Everett, Enumclaw, and Snoqualmie Falls, Washington. This waste provides all necessary raw material to make this output possible . . . thus conserving one of our most important natural resources—standing timber.

We are proud of the important part Sumner Hydraulic Barkers, Chippers, Chip Screens and other machinery have played in this accomplishment in the Weyerhaeuser Mills in the Pacific Northwest.



Designers and Builders of Pulp and Paper Mill, Sawmill, Boardmill and Shingle Mill Equipment

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EVERETT, WASHINGTON

In Canada: Canadian Sumner Iron Works, Ltd., Vancouver, B. C.

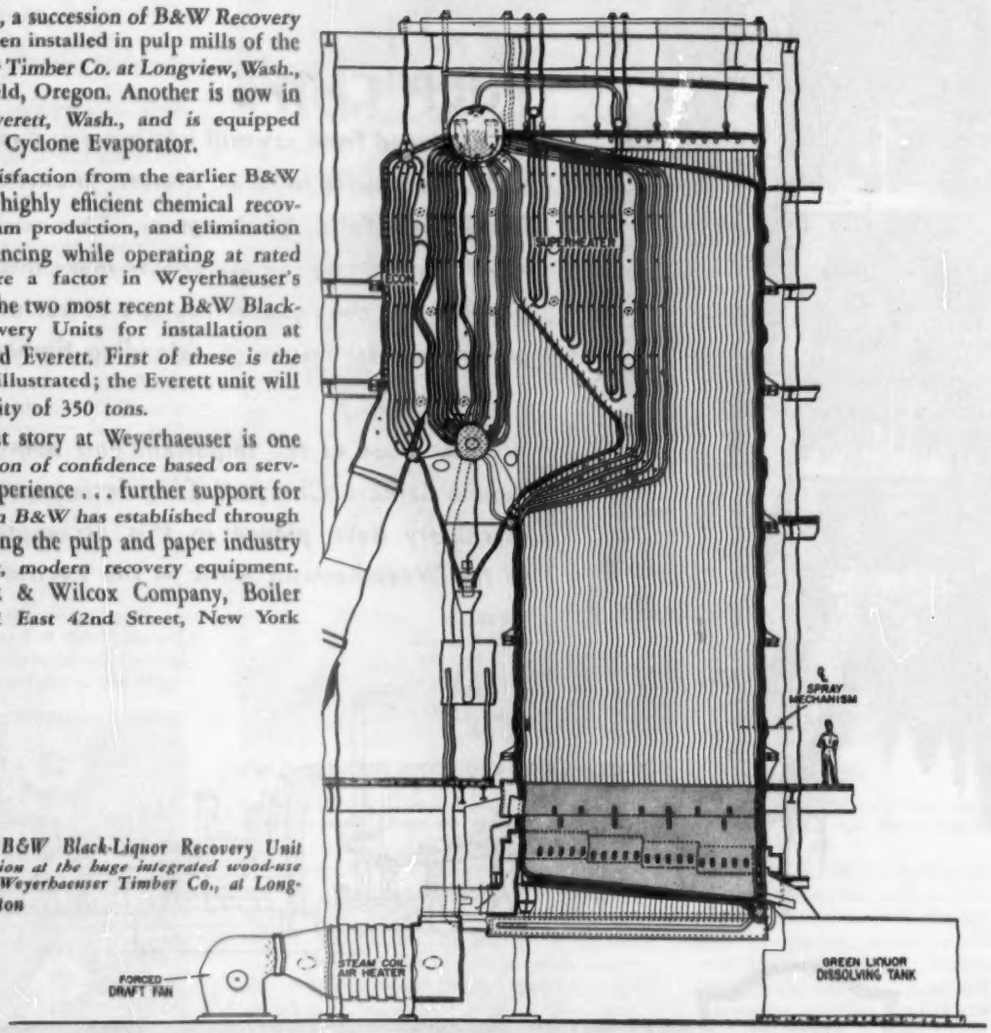


6 B&W RECOVERY UNITS SERVE 3 MILLS OF PULP DIVISION WEYERHAEUSER

Since 1945, a succession of B&W Recovery Units have been installed in pulp mills of the Weyerhaeuser Timber Co. at Longview, Wash., and Springfield, Oregon. Another is now in service at Everett, Wash., and is equipped with a B&W Cyclone Evaporator.

Service satisfaction from the earlier B&W Units—their highly efficient chemical recovery, high steam production, and elimination of routine lancing while operating at rated capacity—were a factor in Weyerhaeuser's selection of the two most recent B&W Black-Liquor Recovery Units for installation at Longview and Everett. First of these is the 300-ton unit illustrated; the Everett unit will have a capacity of 350 tons.

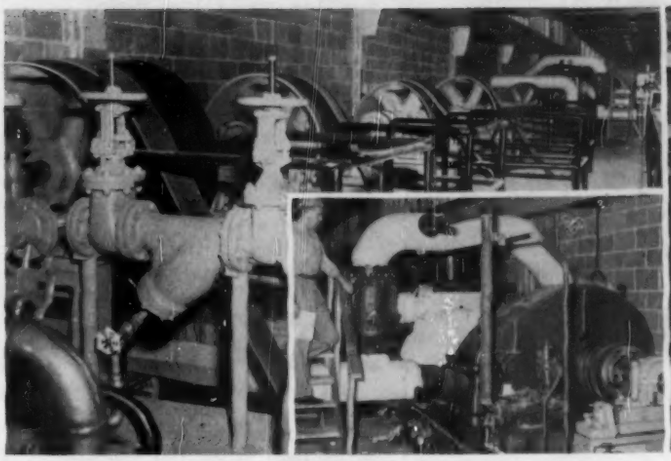
This repeat story at Weyerhaeuser is one more indication of confidence based on service-proved experience . . . further support for the reputation B&W has established through years of serving the pulp and paper industry with efficient, modern recovery equipment. The Babcock & Wilcox Company, Boiler Division, 161 East 42nd Street, New York 17, N. Y.



New 300-ton B&W Black-Liquor Recovery Unit now in operation at the huge integrated wood-use center of the Weyerhaeuser Timber Co., at Longview, Washington

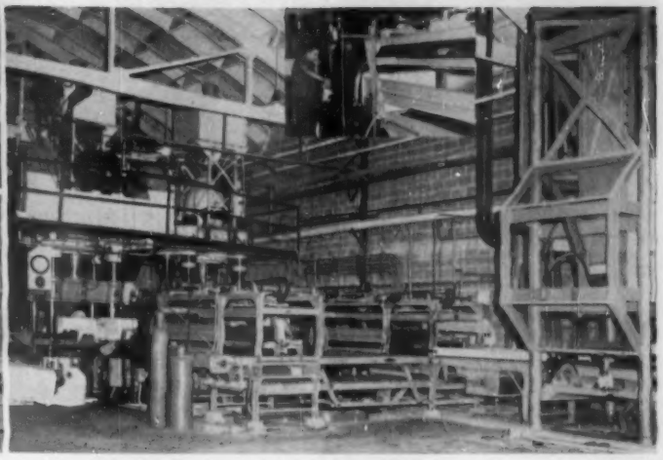
BABCOCK & WILCOX

P-783



PRIME MOVER FOR MACHINE IS ABOVE IT

GENERAL ELECTRIC 350 hp Steam Turbine for Rice Barton machine is on this mezzanine with line shaft and J. E. Rhoads & Sons flat leather belts and sheaves. In lower right is closeup of G. E. Turbine observed by DON WOODEN, of Engineering Staff. In big picture it is in distance.



FINISHING IS ALMOST ALL AUTOMATIC

A MERRY-GO-ROUND that is almost completely automatic is this Finishing area. Note big Washington Iron Works 1,000 ton hydraulic presses at left. Two Signode wire tying machines are in middle area and to help you identify them we have inserted at top another view of one with an operator.

Contact switches and electric eye actuations carry the finished product from the cutter and layboy over a winding route of "Airfloat" conveyors and table transfers and via a Toledo scale.

En route, two big Washington Iron Works 1,000 ton automatic hydraulic baling presses bale the pulp. They have 37 by 43 in. platens between columns and a 36 in. stroke. The press comes down when loading arm contacts limit switch. Tonnage can be changed by adjusting a pressure control screw on the DXP pump. Pressure can be held up to two minutes after which press opens automatically. When a bale is pressed to certain size, the limit switch turns off the press. Here the bales go on to be wrapped, wired and tied by two Signode wire tying machines.

The only thing that has to be done by hand in this whole merry-go-round routine is to place the wrappers around the moving bales and to gently turn them around on their rolls for tying with Bethlehem Steel soft galvanized 12 gauge wire.

After tying, the stacking machine will stack five bales high, and is actuated by an electric eye. Each bale weighs 400 lbs. At the end of conveying lines a Clark Equipment fork truck picks up the stack of bales. Sharp tip on tongues of the fork trucks are a "must" in order to not damage bales. They are stored on wooden pallets, but usually if they go direct to rr cars, it is without pallets.

Ederer Engineering of Seattle supplied two overhead cranes for machine room of 10 and 20 tons capacity each.

Power is Distributed by Modern System

WEYERHAEUSER ENGINEER Norman Rayner designed the electric distribution system with the assistance of General Electric engineers. The bulk of electric equipment for this mill was furnished by GE on a "project basis." This meant all shipments were coordinated and planned to meet exact requirements of the building program, engineering of all GE apparatus was coordinated to assure successful operation of the complete system, all equipment was specially marked and labeled to insure immediate identification and easy handling on arrival, and complete application and service engineering was available at all times.

Power distribution is by a modern load center distribution system with primary power generated and distributed to centers of load areas at 13,800 volts with load center transformers providing 550 volt power for final utilization in these areas.

The over-all system is basically a "secondary selective" design. This means load center substations are in pairs with a normally open low voltage tie circuit breaker provided between each pair. The substations, in turn in a given pair, each receive power from a different primary cable and feeder breaker so that in event of failure of one transformer, cable or feeder breaker, this transformer can be disconnected and the load temporarily transferred to the adjacent transformer, thus maintaining continuity of mill production.

System neutral grounding is included at both 13,800 and 550 volt levels. This means installation failures due to over voltage will be kept to a minimum and maintenance time in locating and isolating ground faults will be minimized. The system has already proven itself from additional safety aspects involved.

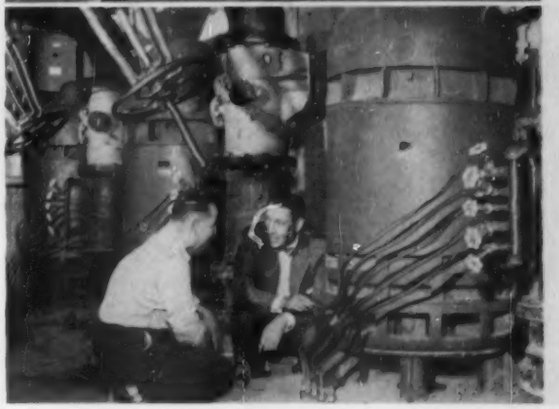
The complete power distribution system includes fourteen 1000 kva and two 750 kva load center type unit substations. In addition, a 3000 kva transformer provides a tie for transferring power from the new pulp mill to the existing saw mill or vice versa as required.

Low voltage feeder breakers in the substations are arranged to feed a few special motors directly, with the remainder of the feeders serving motor control centers. In cases where motors receive power directly from feeder breakers, these breakers serve a dual purpose—motor starting and short circuit protection. Motors started in this manner include the 500 hp boiler feed motor, the 500 hp induced draft fan motor, and 250 hp forced draft fan motor, three



SUPPLIES POWER TO FILTER PUMPS

ONE OF TWO OUTDOOR TYPE 750 KVA unit substations built and installed by General Electric Co. This one supplies power to filter pumps. Note size compared to engineers looking over drawing.



THESE MOTORS DRIVE FILTER WATER PUMPS

THREE GENERAL ELECTRIC 400 hp drip-proof 1180 rpm 550 volt, 3 phase, 60 cycle motors drive pumps supplying fresh clean water to mill. Looking them over are NORMAN RAYNER (left), Electrician in construction and now Chief Electrician of mill, and W. D. VINCENT, General Electric's specialist for pulp and paper field in Seattle.

400 hp filter pump motors, and three 300 hp raw water pump motors. All remaining motors in the mill are started with standard control starters grouped in motor control centers. The total connected motor horsepower in the mill is approximately 15,300.

Incandescent lighting is used throughout, with fluorescent lighting in office buildings. Lighting power is provided by small dry type transformers 550 V primary 208/120 V secondary. Each transformer, in turn, receives power from small circuit breakers included in motor control centers. The lighting system is 4-wire 208/120 utilizing single phase 120 V fixtures.

In both pulping group and power recovery group, separate rooms are provided for load center substations and motor control centers. These are located centrally in their respective load areas and provide adequate protection for electric equipment.

All 13,800 volt power is distributed on three conductor coronol shielded cables, pre-assembled type. This cable is supported on a coated steel messenger, which in turn, is fastened to buildings or available structures. The cable, upon entering buildings, goes into conduit. The low voltage cable is single conductor versatol geoprene in conduit and interlocked armored. In general, interlocked armored cable was used between load center substations and motor control centers. All equipment was installed and wired by Electric Construction Co. of Portland, Ore.

Near Man-Less Water Treating Plant

By J. R. Sheridan

Manager, Northwest Filter Co.

THE NEW WATER TREATMENT plant at the Weyerhaeuser Kraft Mill, at Everett, embodies several new refinements and makes a closer approach to the ultimate plant ideal of a completely automatic plant which takes care of itself, and requires little human attention.

Since approximately 100,000 gals., or 400 tons of water, are usually required for each ton of pulp, small changes in water quality are often magnified in the pulp product.

Conventional water treatment plants normally use alum for coagulation and settling, with the addition of an alkali, usually lime, to maintain pH at proper value to obtain optimum floc. After coagulating and settling, the water is filtered, normally through a sand bed.

The plant at Everett utilizes this conventional method, with several refinements. Some, we believe, are unique. For example, the two settling basins are circular in shape, with coagulating chambers located in the center. This represents collective thinking of Weyerhaeuser and Northwest Filter engineers and the design was carefully checked in our laboratory for performance. Many other design features were considerably modified to meet operation requirements of the Weyerhaeuser engineers, and we are indebted to them for many excellent ideas. All the concrete detail designs were by Weyerhaeuser engineers. Basic features were developed over the years by the Shibley Co., Northwest Filter Co., and others.

The Everett plant's nominal capacity is 27½ million gals. per day, with an emergency maximum capacity of 36 million gals. per day. This is about one-half the water consumption of the city of Seattle during the winter months.

Coagulation is an important step in the

An Unusual Filter Plant

One of most unusual features of the new Weyerhaeuser kraft mill installations at Everett is the almost completely automatic Northwest Filter Co. water treatment plant. This article by Roger Sheridan, associate of William Gibson, veteran water treatment engineer of the Pacific Northwest, describes it.

Only one man is in attendance in an 8 hr. shift. Rest of the time it is unattended. The one attendant has almost nothing to do, except fill chemical hoppers, start up after shutdowns.

Salt free water is piped from six miles up the Snohomish River. A steel concrete lined 42 in. pipe line is buried most of the way and crosses the river at one point.

GOOD VENTILATION FOR MEN AND MACHINES



DECO INDUSTRIAL AIR SYSTEMS



A FILTER PLANT THAT RUNS ITSELF

GENERAL VIEW OF BIG 128 ft. diameter tanks of concrete—one of three—described in article by Roger Sheridan of Northwest Filter Co. Shown in inset is WILLIAM GIBSON, veteran water treatment engineer of Seattle.



THESE INSTRUMENTS OPERATE WATER PLANT

HERE IS AN INSTRUMENT ROOM in the new Northwest Filter Co. water treatment plant at Weyerhaeuser mill, which has maximum capacity for 36 million gallons daily. Mr. Sheridan's article tells how it operates.

operation of a filter plant, as it is essential to bring the pinpoint floc of aluminum hydroxide together repeatedly, to allow it to agglomerate to a size and density that will readily settle in the basin. At the Weyerhaeuser plant, mixing and coagulating is accomplished by using hydraulic mass mixing and coagulating, without mechanical devices.

The raw water is pumped to the plant from the Snohomish River and chlorine is added just before entering the plant. A dilute solution of concentrated liquid alum is added as water enters the first mixing elbow and cylindrical chamber, where the water is mixed and rolled.

On leaving this chamber, a dilute lime solution is added to the water, which then passes through a venturi tube to measure its flow, and enters the second mixing elbow chamber. The metered water flow automatically varies the feed of alum and lime by means of a pneumatic signal, with chlorine flow being separately controlled by modulating the chlorinator vacuum.

From the second chamber, water flow is divided, each half going to five coagulating chambers in series, passing through five successive sets of coagulating elbows, each set of elbows being carefully graduated in size in order to progressively diminish velocity, to prevent breaking up the floc.

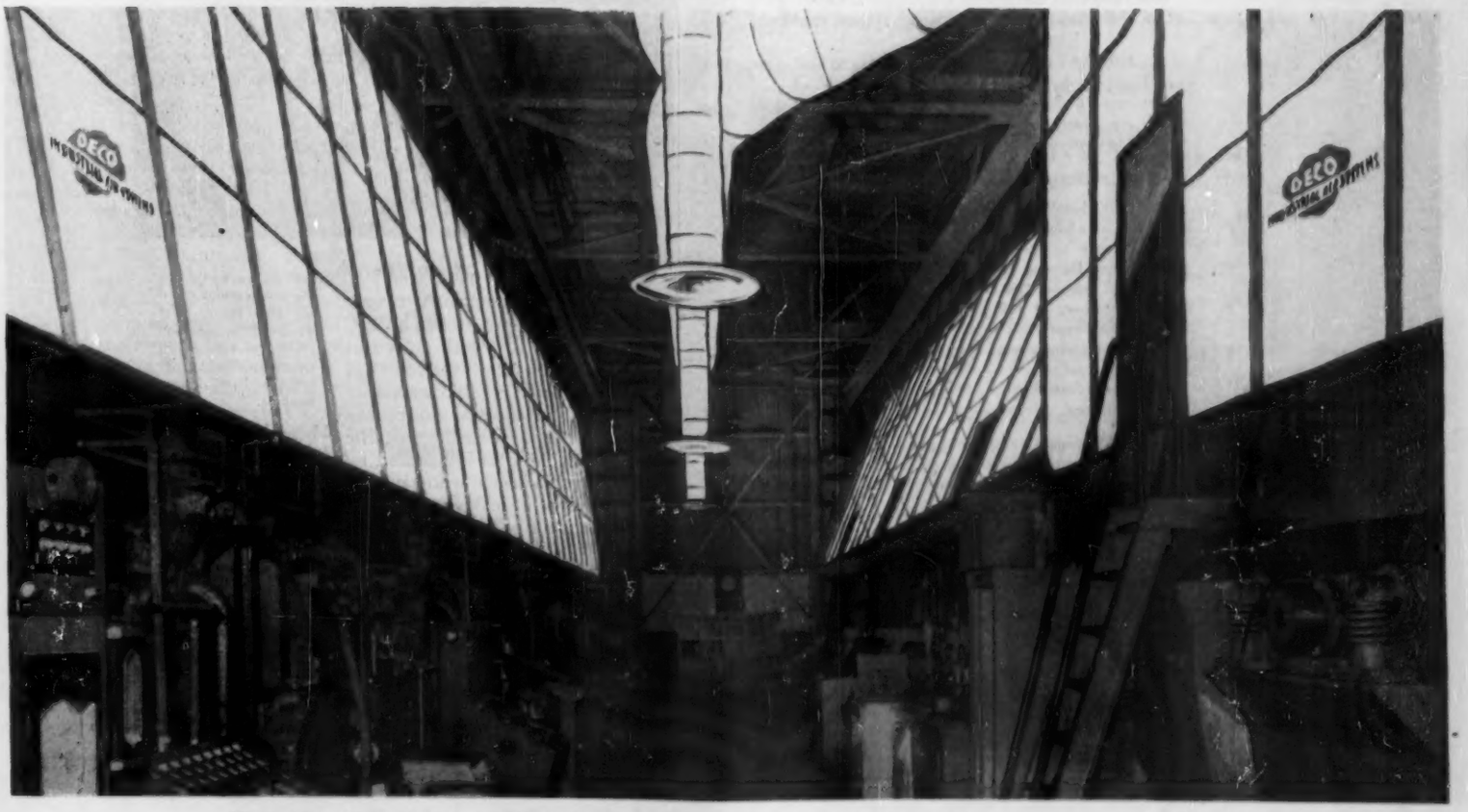
Each set of coagulating chambers is arranged as pie-shaped sectors of a circle, 56 ft. ID, and is in the center of each circular settling basin. At the normal plant rating, the water is retained in the coagulating chambers 30 minutes, and on leaving the chambers, it passes to the settling basin through venturi slots, used to distribute flow uniformly over the entire cross-section of the basin.

The two settling basins are cylindrical in shape, 128 ft. ID by 18 ft. deep, and have a settling period of 2½ hours for maximum flow.

These operations have been observed where

WEYERHAEUSER TIMBER CO. *NEW BLEACHED KRAFT MILL*

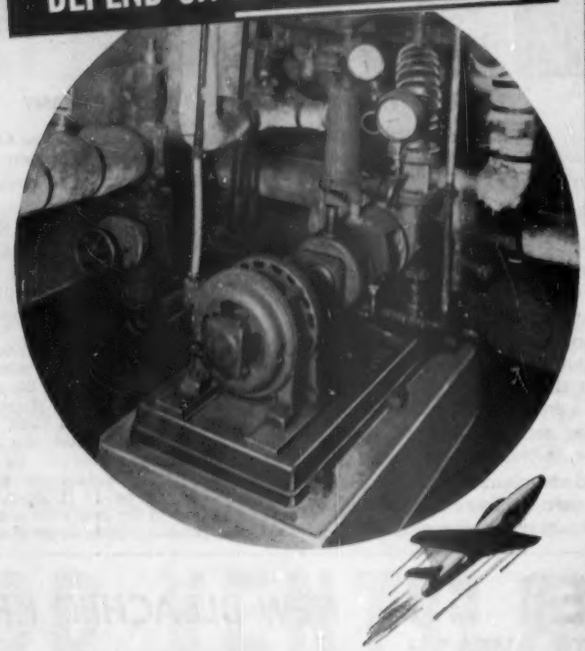
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Jet Handling of Condensate Does the Trick

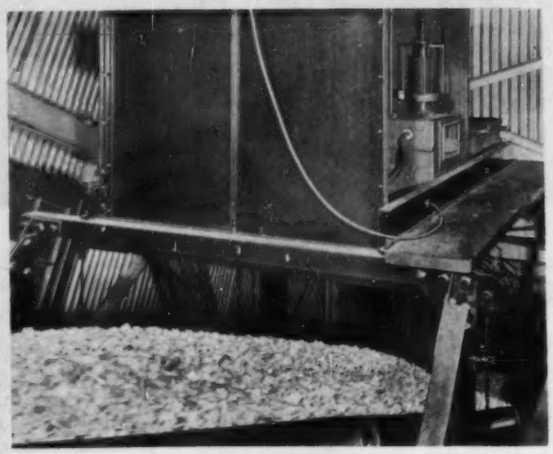
Over 1700 installations prove the "Jet" principle is sound. Operating in a "closed" circuit, the C-B drains condensing equipment directly to boiler without appreciable pressure or temperature loss—no condensate flashes, no loss of BTU's. Jet Action removes "insulating" layers of condensate from steam chambers or rolls, plates and preheaters without pressure or temperature drop. Result: intensified latent heat transfer, uniformity assured, increased operating speed without affecting temperatures, product quality improved. Steam costs are automatically kept to a minimum... results are guaranteed.

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WEYERHAEUSER
CHIP WEIGHS WITH MERRICK

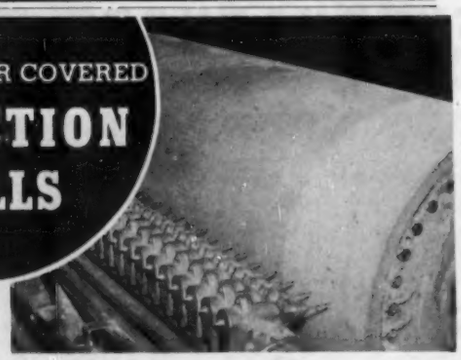


Typical of one of the many Weightometer installations presently in operation at Everett and Springfield weighing Chips to the digester. Other Weightometers weigh Hogged Fuel, Shavings and Bark. All units provide accurate production records of wood processing operations.

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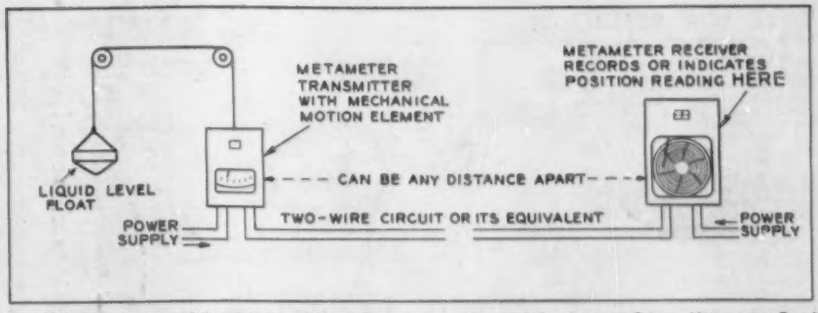
incoming water had a turbidity of 3⅝ parts per million, and water leaving the settling basin had a turbidity of 1 part per million or less. A reasonable amount of turbidity helps in the settling process of a filter plant, by weighting down the floc.

As it leaves the settling basins, water passes over a skimming weir, and proceeds to the filter plant proper. There are 9 double wash filters, each arranged in pie-shaped sectors of a circle 128 ft. ID. The filters rest on top of the cylindrical clear well of the same diameter, which has about one hour storage at full plant rating.

The filter beds are conventional, using a sand bed of three graduated sizes, supported on a gravel bed of four graduated sizes. After passing through the beds, water is collected in copper laterals, carefully sized and arranged so flow is evenly distributed through the bed not only during filtering, but during back wash when the filters are cleaned.

The normal maximum filtering capacity is based on the conservative figure of 2½ gpm of flow per sq. ft. of area, and back wash flow has been measured at 17 gpm per sq. ft. This high back-wash rate is practical because of high specific gravity and uniform characteristics of the sand.

After being collected in the underdrain system, water passes through the rate controller, which varies flow through filters to maintain a pre-set level in the clear well. In effect, this varies filter rate in accordance with plant water demand. However, as the rate of flow rises to the pre-set maximum flow of 2½ fpm per sq. ft., the controller takes over and does not permit it to exceed this amount. The control system is arranged, however, to incorporate a safety feature, which provides that if the clear well drops below a pre-set point, an alarm is sounded, and all filters in unison are stepped up to a filter rate of 3¼ gpm per sq. ft., which is considered the emergency high filter rate. As soon as the clear well level rises again above the pre-set point, control of the rate is automatically restored to the clear well level.



A Bristol Metameter Liquid Level Transmitter transmits tide stage at Smith Island ponds and liquor waste pond level to a 2-pen Metameter Receiver which records the levels.

timer, in conjunction with a timing schedule. There are other automatic functions. For example, the flow of chemically treated raw water is automatically controlled by positioning a valve to maintain water level in the settling basin within close limits, in accordance with plant demand.

All features have been arranged to insure continuity of service. Every operating function has a remote manual control station on the panel board, easily disconnected from the automatic system. The position of all valves is indicated by running lights on the panel. Loss of air supply causes air controlled valves to go to the "fail safe" position, and the plant can be operated manually without air supply.

Any filter panel can be isolated from the control system or other filter panels, and be operated on semi-automatic or manual. Also, if the clear well level is low, and filter rate is automatically increased to the emergency high rate, a local and a remote alarm rings. The local alarm may be silenced by a switch on the master panel, which energizes a warning light, but the remote alarm cannot be silenced at the plant. The emergency high filter rate can also be instituted by a manual switch, but this does not sound the remote alarm. A remote independent reading of the total clearwell water depth has also been provided by Weyerhaeuser.

The control system represents an advance towards an unattended self-operating plant.

How Effluent Is Handled at New Mill

There are two systems for handling effluent from this mill. First, there are sweetwater sewers into the Snohomish River which carry drainage from the turbine room floor, excess water from the filter plant and the outside area into the river.

All other waste is to the contaminated sewer line which has a new type of patented wood-stave pipe without any metal bands which carries mill waste to Smith Island which is considerable distance out in the Snohomish River. This 36 in. pipe is expected to be more satisfactory than other treated or metal pipes with stainless joints used for waste liquor.

This pipe has a patented Lockstave assembly and is manufactured by Brooks Lumber Co. of Bellingham, Wash. On Smith Island there is a 25 acre pond for storage of up to 30 million gals. On outgoing tides this can be released to the sea.

The Bristol Co. supplied instruments and a Metameter system for telemetering the liquor effluent (see drawing). The level of the pond on Smith Island is telemetered to plant operations with the level of the tide in the river. This enables operators to discharge when outgoing tide will carry the liquors well out into deep salt water and shut off flow when tide levels and flows would result in inshore fresh water concentrations.

In this case the two signals are read on one chart so that levels are graphically and proportionally illustrated for operators.

The control system for the plant at Everett can be unattended two shifts out of three, and the plant has been operating on this basis.

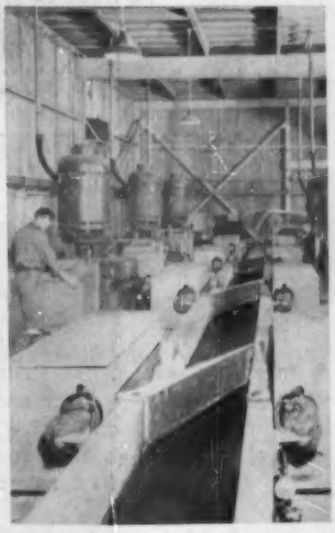
Principal duties of day shift personnel are to check results, make water tests and set control points, and recharge chemical feed hoppers as required. This system incorporates an automatic method of back washing filters, when loss of head on either one of two filters rises to an adjustable pre-set point on recorders. This initiates the cycle which washes each of the 9 double-wash filters in sequence, accomplished by energizing the back-wash program timer for each filter, and the back-wash timer then performs each operation in proper sequence.

To make the operation reliable, so backwashing of filters can be unattended, each individual function is automatically monitored. If the function called for is not completed within a pre-set time interval, an alarm will ring, a warning light will appear on the panel which alarmed out, and the filter will be automatically restored to its normal position. The function which failed to complete its cycle is clearly indicated by the percentage indicator on the

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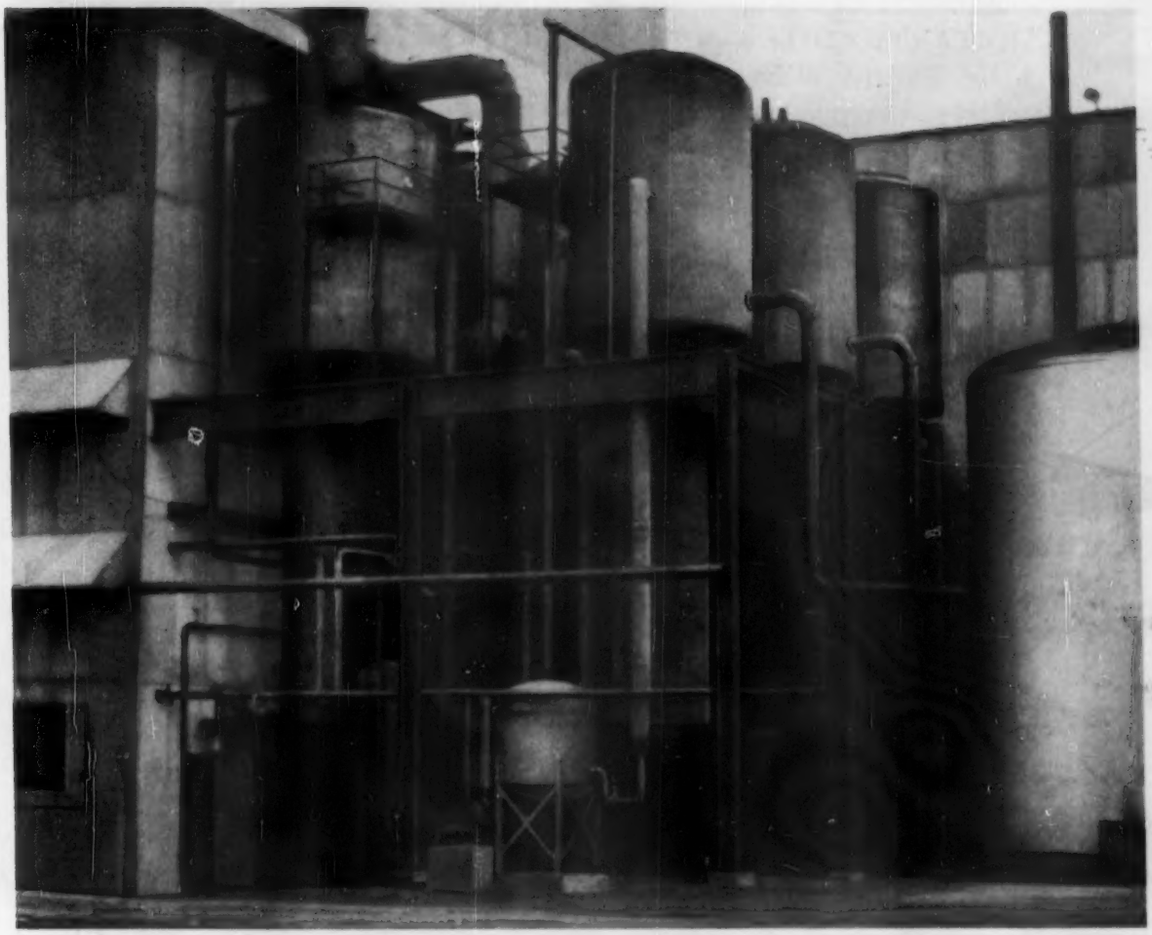
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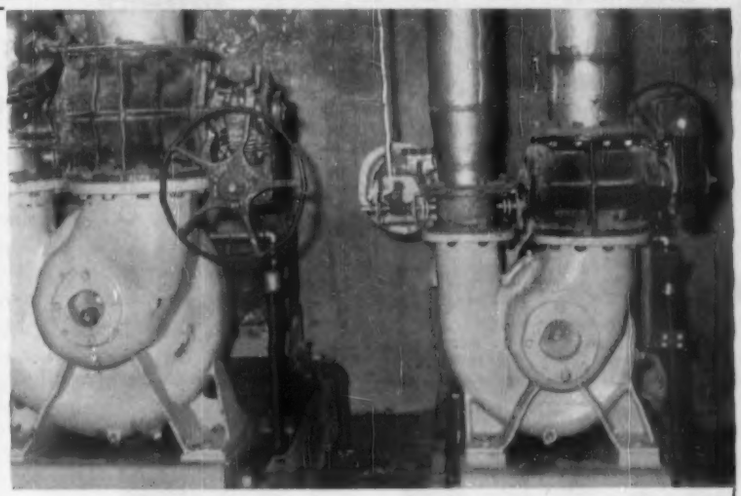
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The large Worm Gear Valves shown are on the white water pumping system in the new kraft mill of the Weyerhaeuser Timber Company at Everett, Washington. Throughout this modern mill, many other DeZurik Easy-Operating Plug Valves are in use. The DeZurik Shower Company is proud to be a part of this great addition to the industry.

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Revisions of World Woodpulp Directory

Since publication of the World Market Woodpulp Directory in the 1953 WORLD REVIEW NUMBER of PULP & PAPER, a number of changes and additions to listings have come to light. As a service to those holding copies of these Directories, PULP & PAPER prints these corrections in such form that they may be cut from the magazine and inserted in their proper places. This Directory was compiled in cooperation with the Association of Pulp Consumers Inc.

Additions under "World Producers":

UNITED STATES

Coosa River Newsprint Co.
Coosa Pines, Alabama
Agent: Bulkley, Dunton Pulp Co., Inc.
Sulfate, bleached

CANADA

Longlac Pulp & Paper Co. Ltd.
(Kimberly-Clark Corp.)
Terrace Bay, Ontario
Agent: Bulkley, Dunton Pulp Co., Inc.
Sulfate, bleached

KVP Co., Ltd.
Espanola, Ontario
Agent: Bulkley, Dunton Pulp Co., Inc.
Sulfate, bleached

SWEDEN

Forsse Woodpulp Mill
Oesterforse
Agent: *Nordicus Inc.*
Groundwood
Special unbleached dry

Sandvikens Cellulosa A.B.
Sandviken
Agent: Nordicus Inc.
Sulfate, unbleached
Special grades
Standard grades
Brands: S Crown S; Special Cable

Utansjo Cellulosa A.B.
Utansjo
Agent: Nordicus Inc.
Sulfite, unbleached
Special grades
Standard grades
Brands: U Crown S Premium; U S Prime; U S Prima B Half Prime; USSA Second Quality; USSB; USU
Refined Screenings

Corrections under "World Producers":

UNITED STATES

Crown Zellerbach Corp.
Should be Sulfite, unbleached (not bleached)

Puget Sound Pulp & Timber Co.
Should be Sulfite, bleached (not unbleached)

CANADA

Abitibi Power & Paper Co., Ltd.
Mill at Sault Ste. Marie, Ont. (not Merritton, Ont.)

MacMillan & Bloedel, Ltd.—Nanaimo mill
Should be Sulfate, bleached, special and standard grades and semi-bleached

FINLAND

Kemi O/Y, A/B
Should be Brands: Kemi OK (not Kemi Blue)

Addition under "Importers and Agents":

Nordicus Inc.
500 Fifth Ave., New York 36, N. Y.
Sweden
Forsse Woodpulp Mill
Sandvikens (Kraft) Cellulosa A.B.
Utansjo (Sulfite) Cellulosa A.B.

Correction under "Importers and Agents":

Parsons & Whittemore, Inc.
Should be Irving Pulp & Paper Co., Ltd. (not St. John Sulphite, Ltd.)

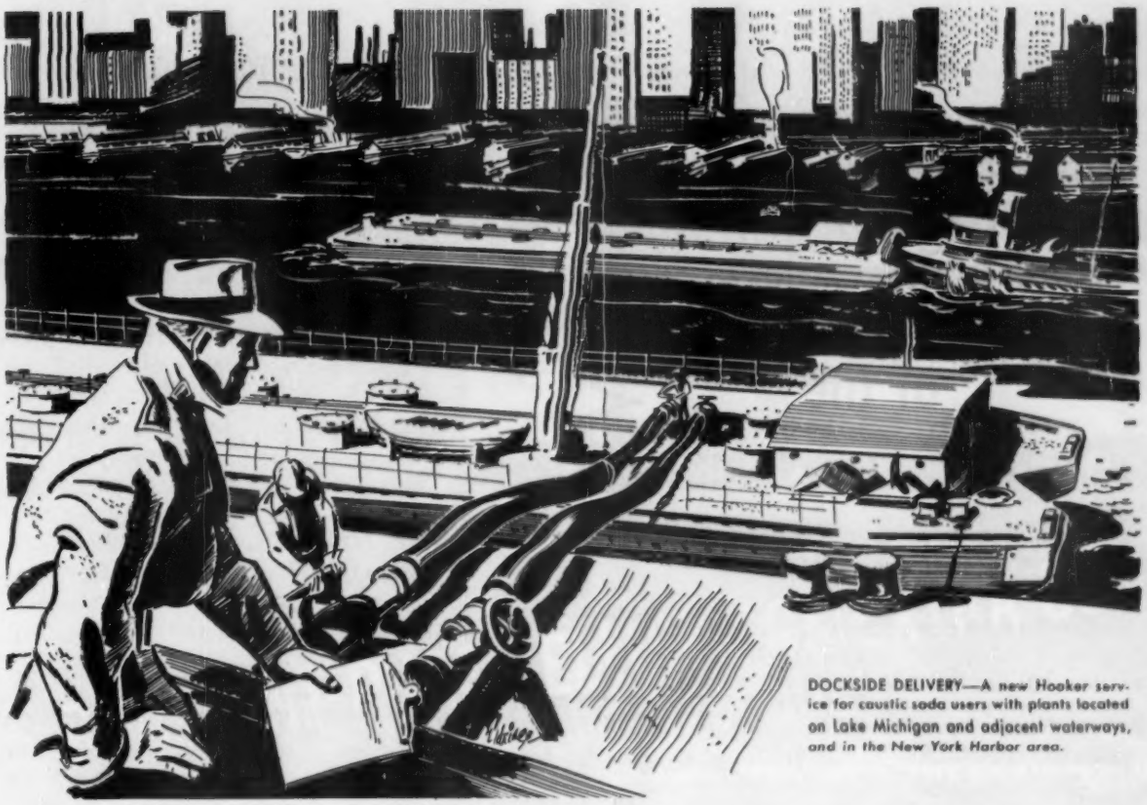


Lindsay Celebrates 50 Years' Growth

Lindsay Wire Weaving Co. played host to 600 employes and guests at a dinner dance at the Hotel Statler, Cleveland, Dec. 5, to celebrate its 50th anniversary.

A leading manufacturer of paper mill wire cloth, Lindsay was founded in 1903 by Hamilton Lindsay. In 1932 he was succeeded in the presidency by A. Fred Crossman, and upon his death in 1950, he was succeeded by Fred L. Crossman.

President Crossman attributed Lindsay's success to the leadership of the past presidents and loyalty and skill of its 335 employes. Vice President R. H. Crossman was master of ceremonies. Eleven new members of the company's Quarter Century Club were presented with watches.



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LOS ANGELES	NEvada 6-3826
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5. Abates Stream Pollution: The Ammonium Bisulphite Process lends itself readily to evaporation of waste liquor and combustion and recovery of heat and chemicals, thus overcoming stream pollution.

6. Low Conversion Costs: You can convert to the Ammonium Bisulphite Process at very low cost, with practically no loss of production during the conversion period.

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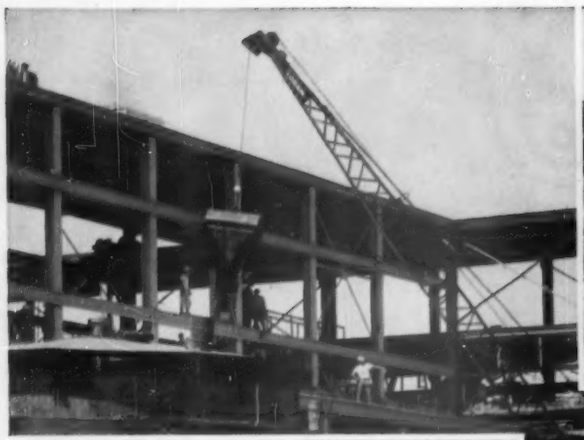
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▲ **LOG CONVEYOR FOUNDATION**

This ¾-yd. Lorain Hoe, model TL25-K, is excavating a 100 ft. trench that will soon keep logs rolling to the mill on a new conveyor system.

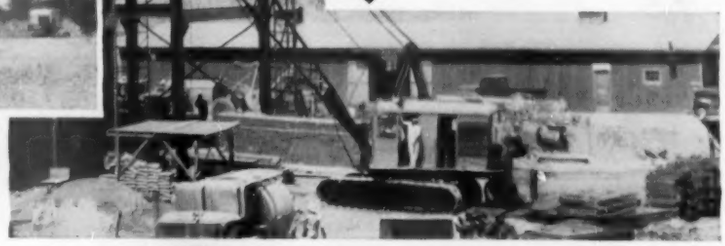
NEW MILL CONSTRUCTION

At the Bowater Southern Paper Corp., Calhoun, Tennessee, a Lorain Crane, model 820-J, hoists a 2-yd. concrete bucket on the construction of a new plant addition.



▲ **NEW PLANT EXCAVATION**

Foundation for a new plant site is a job for these 2 Lorain Draglines, models 820-J and 50-K, for East Texas Pulp and Paper Co., Evadale, Texas. When the plant is completed, the Lorains will handle pulpwood, as well as mill maintenance.



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LOGGING ROAD CONSTRUCTION

At West Virginia Pulp and Paper Company, Charleston, South Carolina, this ¾-yd. Lorain Dragline, model TL25-K, is used on construction of new logging roads near Moncks Corner, South Carolina. Shown here, the Lorain is stripping soil to be used for dressing logging roads.



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◀ **PLANT OPERATION**

Cornwall Division of the Howard Smith Pulp Mills, Cornwall, Ontario, uses a Lorain 80-J with clamshell bucket to handle coal for plant operations.

"Fireworks" Enliven Mid-Century Conference

SOME PROGRESS towards obtaining a "meeting of minds" was one of the main accomplishments of the Mid-Century Conference on Resources for the Future, held in Washington, D.C., Dec. 2-4. Sponsored by Ford Foundation, the controversial meeting drew 1,354 registered participants—and it is safe to say that 1,354 opinions were registered, also, during the 3-day session.

Pulp and paper representatives and others found many areas of agreement. But observers expect any policy patterns would more likely come from the ballot box rather than from the conference table.

PULP & PAPER gathered these comments from participants:

Harry Mosebrook, U.S. Chamber of Commerce: "The Mid-Century Conference was a middle-of-the-road approach to the whole resources problem."

Willard S. Bromley, executive secretary, American Pulpwood Assn.: "We were pleasantly surprised at the wide areas of agreement on forest policy. These included the Forest Service, private pressure groups, and the industry. These potentials were first indicated at the Forest Congress (see Dec. issue, PULP & PAPER, page 105) and were crystallized here. There was remarkable agreement on the need for re-examination of our land ownership pattern and doing something about it. That regulation is not the answer seems agreed; and there is agreement, too, in the need for more action in education and cooperation and research. It was agreed research should be doubled in the next five years. There seemed fairly general agreement that the Timber Resources Review (by U.S. Forest Service) will bring out information of value, though some factors will remain controversial."



KEY FIGURES AT CONFERENCE

DR. REUBEN G. GUSTAVSON (left), President of Resources of the Future Inc., who tells its aims in interview with *PULP & PAPER* published with this article.

BENTON R. CANCELL (right), Vice Pres. in charge of Operations, Rhinelander Paper Co., and former top industry and wood procurement executive of WPB in World War II, who chairmanned the session on Timber and Wood Products.

James L. Madden, former president of American Forest Products Industries and president of Hollingsworth & Whitney: "I was impressed by the full opportunity afforded industry to state its position. We feel there was sympathy for this position and that industry benefitted. Forest genetics research, which may be forthcoming under Foundation sponsorship, should have industry support. I feel industry cooperation may well be extended to future activities of this organization."

Edward Cliff, assistant chief, U.S. Forest Service: "I am encouraged to see accord on the need of access roads for National Forests, making possible utilization of mature timber."

E. O. Ehrhart, president, American Pulpwood Ass'n., and president, Armstrong Forest Co.: "This meeting demonstrated progress can be made from meeting, face-to-face, and discussing controversial issues soberly."

Fireworks Aplenty!

Although these remarks indicate delegates had come to some "unwritten" agreements by meeting's end—or were just plain tired—there were fireworks aplenty during preliminary sparrings. Able exponents of contrasting views on "The Public Lands —Who Should Control Them?"—were Representative Wesley A. D'Ewart, of Montana, and Judge Robert W. Sawyer, Bend, Ore. Representative D'Ewart urged private development of public land resources, with federal action only when the public interest cannot otherwise be served. Judge Sawyer urged federal control, asserting it would insure management for multiple use of the lands. It was on this theme most controversy developed. Example: J. Elmer Brock, Wyoming Natural Resources Board, vs. William R. Mathews, publisher, Arizona Daily Star. Mr. Brock spoke feelingly of "Eleven Western Provinces." He felt they did not have statehood because of big federal land areas. One-seventh of Wyoming is in National Forest, returning little income to the State, and containing much over-ripe lodgepole pine, he said. Mr. Mathews asserted 74 per cent of Arizona in federal hands was being managed magnificently by the Forest Service.

Access Road Problem

The matter of access roads for National Forests was debated. W. D. Hagenstain, *Industrial Forestry Assn., Portland, Ore.*, said he was not for more money for the Forest Service, except for access roads. Edward P. Stamm, Crown Zellerbach, vice president, suggested a meeting of managers of public lands to work out a long-range roads plan. Edward Cliff, of the Forest Service, said an adequate roads system would require a five-year government program at $20 million a year, plus roads built by timber purchasers. This would allow marketing of 6.6 billion feet of mature timber annually. Col. Greeley asked if the Ellsworth Bill, empowering the national forests to borrow money for access roads, had been considered. Mr. Cliff said it had but the legislation had not been reported upon by his department. President Ehrhart of APA suggested the federal government turn over lands to the states for building access roads, with financing by sale of bonds, liquidated by tolls from all users.

Here's What It Offers Pulp and Paper

Just what is Resources for the Future, Inc., and what connection will it have, if any, with the pulp and paper industry? PULP & PAPER asked Dr. Reuben G. Gustavson, president and executive director of this private corporation, established under a grant from the Ford Foundation, to foster research and education in natural resources.

The goal, according to Dr. Gustavson, is to accomplish in social sciences what the Rockefeller Foundation has accomplished in medicine. It is understood Resources for the Future has an initial grant of $500,000 to be allocated for research.

Dr. Gustavson said that as a former head of a land grant college, University of Nebraska, he could appreciate the value of seed selection, and he became interested in forest genetics and physiology during a trip to Sweden two years ago where he visited a tree breeding station and saw work with hybrids. He has since been in touch with the Forest Genetics Research Foundation in Berkeley, Calif. and has considered sponsoring a meeting of government, industry and research people to define the genetics problem and suggest a pattern for research.

Basic research, where there is not the interest to secure funds, is where Resources for the Future money may be spent most effectively, Dr. Gustavson said. The Ford Foundation has $25 to $30 million to allocate for research with Resources for the Future getting part of this. The Foundation stipulates that money cannot be spent politically or in support of legislation, and can only go to established, non-profit institutions. From 15 to 20 requests have already been made for research in forestry, Dr. Gustavson said.

Dr. Gustavson expressed appreciation to this industry for its support of the Mid-Century Conference in its endeavor to obtain an objective rather than a slanted meeting.

Where There Was Accord and Conflict

There were frequent conflicts in the discussions of the session on utilization and development of land resources for timber and wood products. Chairman was Benton R. Cancell, vice president in charge of operations, Rhinelander Paper Co., who played a big role in getting essential wood production for forest industries in World War II.

There was agreement that progress has been made since World War II, in improving forestry on small woodlots. Confidence was expressed that acceleration of educational and assistance programs will improve practices to the point where small woodland areas will carry increasing weight in meeting future requirements. There was agreement that federal, state and private cooperation is necessary to achieve this, but they disagreed on respective responsibilities of each, and extent to which services other than educational should be free.

Research in fire, insect and disease control, reforestation and management was generally conceded a federal responsibility, although not exclusively. A relatively greater state contribution was favored.

It was proposed that the pattern of cooperation between federal, state and private agencies, successful in fire control, be followed in pest control. The Council of State Governments has prepared a model pest control law already adopted in some states. Pest control would be largely a state and local matter, with federal grants and inspections.

Two views were expressed on production of seedlings. One held federal grants-in-aid to states had been helpful but that state nurseries were now established and should be self-supporting. The other held that aid is still needed, at least in some sections of the country.

Greatest disagreement concerned federal grants for forest management. The majority appeared to favor federal research and financial assistance to states with states taking primary responsibility in education and demonstration. It was also stressed that industry should take increasing responsibility in educating and assisting landowners. Some felt the state should provide free technical services; others said a charge should be made; still others maintained these services should be furnished by industrial and consulting foresters and the state should keep out of direct service.

Relatively little sentiment was expressed for federal regulation of cutting. On group felt that state regulation, cooperatively developed at the local level, could contribute materially. Another felt regulatory laws would be premature and favored increased education. It was pointed out the trend in state laws is away from fixed minimum practices toward a flexible system leaving responsibility in local boards composed largely of landowners.

There was substantial agreement that

Continued on page 108

New Loader Seen in Louisiana

NEW EQUIPMENT for pulpwood handling —the Clark-Ross Pulpwood Loader—was given a field demonstration through arrangement by C. E. Wilds of Brown Paper Mills at the fall meeting of the American Pulpwood Assn. and guests at Monroe, La.

Several pulpwood production and procurement managers of paper companies in the South told PULP & PAPER that this demonstration and another showing of the Four-Wheel Drive Co.'s "Blue-Ox" skidding tractor were among outstanding events of this meeting. Over 75 attended.

Many of them expressed special interest in the Clark-Ross loader, a Ross Model 15-LH carrier with loading device, now being manufactured by the Industrial Truck Division of Clark Equipment Co., Battle Creek, Mich. Clark recently acquired the Ross Carrier and Michigan Power Shovel companies.

(The "Blue-Ox" was pictured and described in detail on p. 76, Oct. 1953 issue of PULP & PAPER).

Operation of a McCulloch centrifugal fire pump, delivering 250 gpm at 100 psi from a portable 57 lb. pump, was shown. And two men used a small hoist with boom mounted on Ford-wheeled tractor to yard scattered pulpwood bolts.

Several Clark men were on hand for the demonstration of their new loader. Clark has in the field P. E. Campbell, 6100 So. Kings Highway, St. Louis, as manager for South Central and Deep South states, assisted by M. B. Dickey. In Atlanta, Ga., covering the Southeastern states, is John Shand.

Barking, chipping and full utilization of sawmill leftovers featured discussions under chairmanship of Tom Busch, International Paper Co., pretty much along the line of the discussions at the Lufkin meeting also reported in this section.

Don Tufts, Crossett Mills, Stephen Kaptain, St. Regis, and Alfred Mouron, Rust Engineering, described new chip handling techniques and Tony Horstman, Bauer Bros., told of the aspiration system for separating bark from chips.

Gus Jacobson of Soderhamn Machine, and Sydney Hansel of Hansel Engineering, discussed their barkers, as they had at Lufkin. S. O. Jones, Nelson Electric Mfg., told of a converted pole peeling barker with rotary cutter which barks 50M bd. ft. in 8 hrs. in Idaho. R. E. Howe, Wood-Treating Chemical Co., told of their new Hurricane Log DeBarker.



TOOK PART IN APA MEETINGS

Top, l to r: TOM BUSCH of I.P., who presided at Monroe, La.; S. O. JONES, Nelson Electric Mfg., and R. E. HOWE, Wood-Treating Chemical Co., who espoused cutter head barkers.
Below, l to r: DR. C. E. HARTFORD, Riegel Carolina; IAN SIMS, I.P., and DR. A. P. YUNDT, Camp Mfg.— discussed more pulp from fewer trees.

Durban, N. C. APA Meeting

Increased use of sawmill leftovers also featured discussions at the APA Southeast meeting at Durban, N. C., Nov. 18, which 32 attended, chairmanned by Ken Trowbridge, North Carolina Pulp Co.

Technical phases of wood preparation and storage and factors broadening possible use of wood leftovers were subjects touched on by Dr. C. E. Hartford, vice president and manager, Riegel Carolina Corp.; I. Frank Thompson, manager at Charleston for West Virginia; J. W. McSwiney of Brunswick; H. H. Fickinger, Ian Sims and D. B. Armstrong, all of I.P., and Dr. A. P. Yundt of Camp Mfg. J. H. Johnson, Camp; C. H. Niederhof, West Va.; Mr. Fickinger and J. A. Holekamp, APA logging engineer, comprised the program committee.



CLARK-ROSS LOADER SHOWN IN SOUTH

BIG BROTHER TO the standard fork lift truck is this CLARK-ROSS PULPWOOD LOADER with special loading device, manufactured by Industrial Truck Division, Clark Equipment Co. Its long boom can be tilted to load both sides of a rail car from one side of the track. The Pulpwood Loader is a standard fork lift truck with a special device to transfer 5-ft. pulpwood from truck to rack car, handling 9,000 lb. loads at 92½ in.

Here's what makes NORTHWEST a better Crane for the Paper Mill

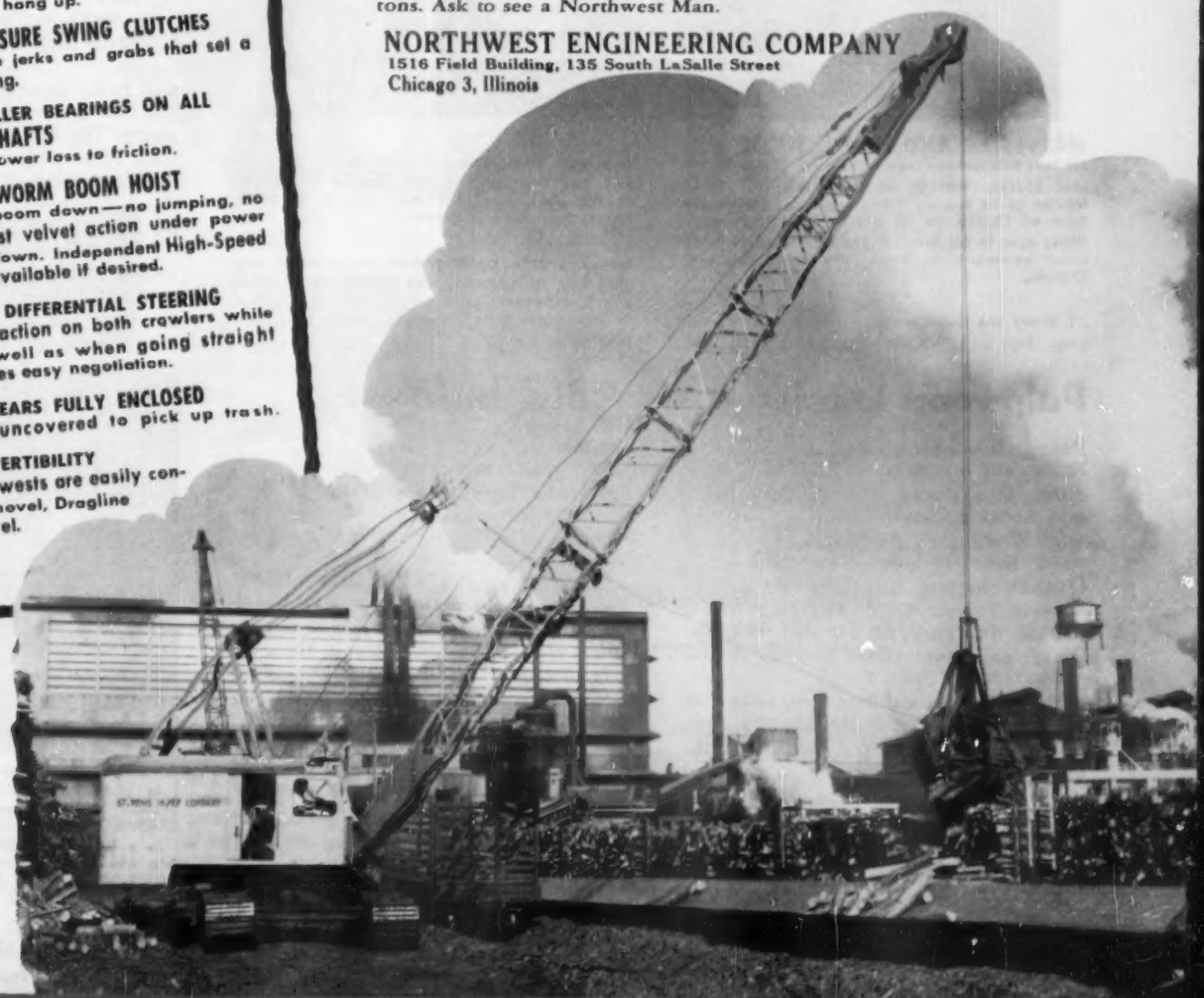
- **SIMPLICITY OF DESIGN**
  —for easy upkeep.
- **CAST STEEL BASES WITH CAST STEEL MACHINERY SIDE FRAMES**
  —eliminates weaving—assures the alignment of shafts and bearings and reduces wear.
- **"FEATHER-TOUCH" CLUTCH CONTROL**
  —easy operation—no shutdown because of control failure. No pumps or compressors.
- **CUSHION CLUTCH**
  —Reduces overloads on parts under power when the tongs hang up.
- **UNIFORM PRESSURE SWING CLUTCHES**
  —eliminate the jerks and grabs that set a load to swinging.
- **BALL AND ROLLER BEARINGS ON ALL HIGH SPEED SHAFTS**
  —minimum power loss to friction.
- **NORTHWEST WORM BOOM HOIST**
  —boom up, boom down—no jumping, no chattering, just velvet action under power both up and down. Independent High-Speed Boom Hoist available if desired.
- **NORTHWEST DIFFERENTIAL STEERING**
  —positive traction on both crawlers while turning as well as when going straight ahead assures easy negotiation.
- **CRAWLER GEARS FULLY ENCLOSED**
  —nothing uncovered to pick up trash.
- **EASY CONVERTIBILITY**
  —all Northwests are easily converted to Shovel, Dragline or Pullshovel.

Here is one of the several Northwests owned by St. Regis Paper Co. of Pensacola, Fla. It is one of the many Northwests now serving such well-known firms as St. Regis, St. Joe Paper Co., New Brunswick Paper Co., K. V. P. and many others. Repeat orders from these firms are proving Northwest's ability to serve the paper mills more efficiently.

Your Northwest will do things no track type rig can do. It will unload a whole train of cars without an extra line of track. It will handle any type of goods from pulpwood to bulk chemicals. It can be kept busy at great savings from the pulpyard to the loading dock.

Check over the Northwest advantages and then let us tell you more about them. There is a size for every problem from 10 to 50 tons. Ask to see a Northwest Man.

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1516 Field Building, 135 South LaSalle Street
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NORTHWEST

The Crane That Goes Anywhere

10 to 50 TONS



HARVESTER AND DROTT SHOW

LIFTING BIG western logs high in air is this DROTT Skid Loader, working on INTERNATIONAL HARVESTER TD-14 Tractor. It has pry-back or break-out force of 18,000 lbs for use in frozen log decks. While new to Far West, it has been used in pulpwood operations in Great Lake area, especially Ontario.

AT RIGHT are four Crown Zellerbach men at Congress. Top: C. E. NICHOLS (left), Logging Mgr. in Northwest Washington, and ED P. STAMM, Vice Pres. and Gen. Logging Mgr. Middle: OAKLEY W. DEXTER (left), Asst. Vice Pres., and K. C. OSIER, Timber Dept., both of Seattle.

Below: CLYDE A. CORMAN (left), Weyerhaeuser Logging Mgr. at Longview, who presided at Congress, and AXEL BRANDSTROM, Vancouver, B. C., Mgr. for Celgar (Celanese) Development Co., Ltd., planning mills in B. C.

Pulpwood Loader Is Unveiled in West

PULPWOOD PRODUCERS found plenty of facts, figures and machinery to keep them busy during three days of the 44th annual Pacific Logging Congress Nov. 4-6, in Seattle, Washington, America's No. 1 pulpwood state. It was fitting that Clyde Corman, logging manager for Weyerhaeuser Timber Co.'s Longview, Wash., branch, was president for this 44th, for his company contributes mightily to the nation's pulp supply.

The machinery exhibits were valued at $3,000,000, by all odds the greatest such assemblage the industry has ever witnessed.

Panel discussions ranged from power saws and road building to yarders, loaders, etc.

The loggers voted resolutions to urge more federal roads to save infested timber ber, recommended state bank credits on timber collateral and demanded a halt to federal land acquisition except for defense.

Edward P. Cliff, Asst. Chief, USFS, asked the congress to appoint an "industry committee" to meet with USFS to discuss access roads and timber harvest. He said: "We are just kidding ourselves about getting intensive timber management on the national forests without an adequate permanent road system. Intensive management of national forests would add about 4 billion feet to present allowable annual cut."

South Will Bark and Chip More Waste

EQUIPMENT CAPABLE of barking and chipping Southern logs and wood waste for all sizes of mills down to 8M feet (B.M.) per day is becoming available and an upsurge of this source of pulpwood will occur during 1954. That picture was presented at the Deep South Section meeting, Forest Products Research Society, at Lufkin, Tex., Nov. 9-11. Slabs as well as round wood will be handled. A design for sawmill slab concentration yard was drafted.

Southern Lumber Co., Warren, Ark., and W. T. Smith Lumber Co., Chapman, Ala., are now operating 26-in. ring Anderson mechanical debarkers, and, according to Gus Jacobson, president, Soderhamn Machine Mfg. Co., 15 of these will be in operation next May. There are three models for mills of different sizes.

Mr. Jacobson quoted $1.00 per M-feet of productive capacity as the measure of what a sawmill can invest in barking and chipping, and said it probably will be obsolescent in 10 years.

Horizontal chipping of slabs was demonstrated by Sydney Hansel, Hansel Engineering Co., Seattle, who exhibited a model. Motion pictures showed Hansel hydraulic barkers, including six models to fit mills of 40M daily capacity and above. The new Kirby Lumber mill at Silsbee, Texas, will have two. A pulpwood barker being installed in Georgia uses water at 1460 psi with conveyor speed of 260 fpm. It can bark 37 cords of 5 ft. wood per hour.

Slab debarking studies by Senior-Juengling-Knall, Birmingham, Ala., engineering firm, in association with St. Regis Paper led to an experimental installation at W. A. Belcher Lumber Co., in Birmingham.

Production of chips presents a wonderful opportunity to lumber mills, and an aid to forest management, declared W. R. Warner, general manager, Southern Lumber Co., Warren, Ark., first operator to sell chips to paper mills.

If the 65 mills producing 10 million feet annually chipped their waste it would yield 495,000 cords, but a small percentage of the 14,564,900 cords of pulpwood produced South in 1952, said W. L. Lear, Crossett Industries. He said this showed the outside source would not depress the market.

Crossett's lumber mill is installing a Nicholson Mfg. Co. (Seattle) mechanical log barker. Chips will be moved the ¾ mile to the paper mill in rebuilt cars holding 21.7 cords per car in four compartments. The car is patterned from Longview Fiber Co., and 12 will be needed.

A long term chip contract with W. T. Smith Lumber Co. said Stephen Kaptain, St. Regis Paper Co., conserves forest and reduces paper mill capital investment in timber lands. The contract calls for 5,000 cords of hardwood chips annually when St Regis has its 250 ton semi-chemical mill in operation.



AT DEEP SOUTH Forest Research meeting. Top—l to r: GUS JACOBSON of Soderhamn Machine; SYDNEY HANSEL, Hansel Engineering, and PAUL KRAMER, Texas Forest Service, Chairman. Below, l to r: MYRON KUHLMAN, Fleming & Sons, who told about semi-chemical pulping of hardwoods; GOSTE WIRTAVUORI, Sales Mgr. for Soderhamn in Sweden; J. W. LOIRY, Soderhamn.

Rhinelander Gets 10-Year Wood Deal in Saskatchewan

Rhinelander Paper Co., Rhinelander, Wis., has closed a deal with the Saskatchewan government timber board whereby 200,000 cords of sap-peeled spruce pulpwood will be provided by the Canadian province annually for the next ten years.

Most of the wood will come from the Hudson Bay area. None will be from the 2,000 square mile area in the Candle Lake district optioned by the Anglo Canadian Pulp & Paper Mills of Quebec for a possible mill.

THE HARRISON LOADER CRANE

PROVEN for DURABILITY and ECONOMY



Loader Crane in actual operation

Yes, one Loader Crane put in 15 months hard work handling pulp wood without repair cost. That user now has two more Loader Cranes on the job.

Get a Loader Crane on your job. Wherever your trucks can go, your Loader Crane can go to unload them—even in small yards. Use it for stockpiling, load with it from stockpiles or direct from trucks.

With a high lift to unload your trucks and a long reach to place loads on the far side of gondolas, the Loader Crane speeds up every phase of handling pulp wood on the storage yard.

A new design feature, the automatic counter weight, gives the Harrison Loader Crane unequalled stability. Moving back as load is lifted, the counter weight transmits load stresses to the rear axle, makes operation easier, reduces strains caused by "rocking." Counter weight is hydraulically operated, fully automatic. Large tires (1800 x 26) give flotation and add to the loader's stability. No other crane of any type can match this performance.

The Loader Crane is mounted on a Case "LAI" industrial tractor—weight of loader and tractor including counter weight is approximately 27,000 pounds.

For further information write or call—

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Over the Top...

MISSION ACCOMPLISHED with JEFFREY PULPWOOD STACKER

The primary function of this unique stacker system is to pile pulpwood methodically and at minimum cost.

Moving on a circular track, this pivoted Chain-type Stacker delivers the goods, giving you that much-needed "stock on hand" so necessary in paper making. This Jeffrey Stacker is flexible — can pile in various places in the storage yard.

Jeffrey engineers have made many similar applications, both chain and belt-type stackers, for quick and systematic handling of material. If it's material handling . . . if it's moving something from here to there . . . likely our engineers have worked out a reasonable solution. Give them a chance to go to work for you.





Shown in action at this large paper company, the Rotary Stacker swings over the storage pile. It is pivoted and rides on a circular track.

Car Pullers
Chain Conveyors
Belt Conveyors
Spiral Conveyors
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For modern mechanization — from pulpwood to paper — call on Jeffrey.

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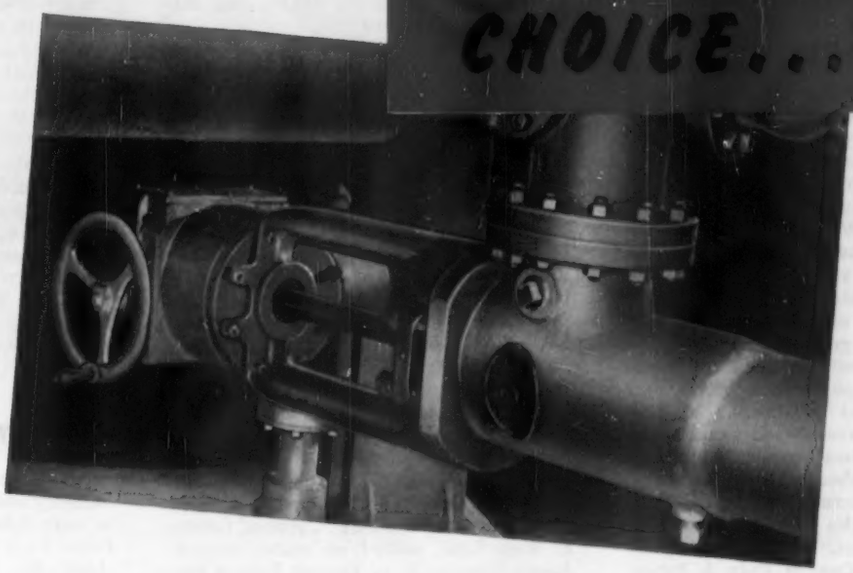
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HYDRAULIC-OPERATED

Yarway Digester Blow Valve—one of six installed at large North Carolina paper mill.

TAKE YOUR CHOICE...



MOTOR-OPERATED

Yarway Digester Blow Valve—one of eight installed at large Canadian paper mill.

You can choose between hydraulic-operation and motor-operation when you specify Yarway Digester Blow Valves. Both combine all the following Yarway advantages:

- Remote control, usually from above, on the operating floor.
- Tight shut-off. Effective sealing under full digester pressure. Saves cooking liquor. Insures thorough pulp cooking.
- Free discharge. No pockets. Full discharge with minimum pressure drop. Digester blows clean.
- Rugged construction. Built to withstand shock and wear of toughest service.
- Modern metallurgy—such as sliding plunger of hardened stainless steel and sleeve of chromium nickel—resists wear and chemical action.

For full details, write for Yarway Bulletin B-440.

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PERSONALITIES AT SEATTLE MEETING

Left to right, DONALD DICK, Labor Relations Director of Howard Smith Mills, Cornwall, Ont., who brought report in his role as Superintendents' International President; GORDON ANDERSON, Vice Pres., Puget Sound Sheet Metal Works, chairmanned Registration and Housing; SINCLAIR STRAYER, St. Regis, Tacoma, who talked on bag papers; HOWARD J. (BILL) LEECH, Weyerhaeuser, discussed what qualities milk container board must have; C. H. OBERT, Rayonier, Hoquiam, discussed bond papers made there for Hammermill Paper Co.; THOMAS H. GRANT, Publishers' Paper, said speed-up has been big thing in newsprint; J. B. BECK, Oregon Pulp & Paper, said Western hemlock makes good glassine; CHARLES ACKLEY, Crown Z, West Linn, past President of Supts., was Moderator of paper session.

Quality Requirements Going Up for Many Grades

CROSS-COUNTRY visit of the national president of the Superintendents Association, Donald R. Dick, labor relations director of Howard Smith Mills in east Canada, to the Pacific Coast Division meeting Dec. 4-5 in Seattle, was highlighted by an invitation from him to delegates to attend the next national convention in Montreal's Mount Royal hotel June 20-22.

Quality requirements for several major grades of paper and board provided a timely theme for a series of round table discussions on a program arranged by John Victor, of St. Regis, convention chairman, and Max Bailey, Westminster Paper, program chairman. There were 370 registered.

Tommy Grant, veteran superintendent of Publishers' Paper Co., said that except for uniformity and color, newsprint quality has not improved greatly in 20 years but the big achievement has been speed-ups giving lower cost paper in face of higher labor, materials and investment costs. Hydraulic barking leaves dirt in wood, and it has been impractical to use high cost labor to remove imbedded bark and seams but the Centri-Cleaners, Dirtecs and Vortraps have been the timely answers for getting a clean sheet.

J. B. Beck, of Oregon Pulp & Paper, said hemlock is preferred in the west for glassine and, in his opinion, it was better than spruce in the east—he was in the east Canada industry until recent years. The beaterman judges suitability of his pulp by freeness and feel, he said. Preparation equipment, said Mr. Beck, can be lava stone beater, with Bidwell bed plate, E. D. Jones precision or Bertram beater and for Morden Stock-Maker, followed by refining by Jordan, Morden Stuff-Maker and/or Hermann Claflin refiner. His mill, he said, uses lava stone beaters, Morden Stock-Makers and Miami Shartle Jordans.

Howard Leech, Weyerhaeuser Timber Co., Longview, said quality requirements for Fourdrinier board have greatly increased and multiplied in recent years. Basis weight and mullen were about the only ones in old days—now caliper and moisture content are among the most important. He also named finish, stiffness, cleanliness, air resistance, formation and other qualities.

The milk carton stock, largest grade made at Longview and a grade in which production is increasing all over U.S., must have a desirable stiffness and be reasonable in cost, he said. If wax film ruptures, the board should be resistant to lactic acid. Just-right porosity is important so wax consumption is not high. Printability, brightness and cleanliness are other rigid requirements, said Mr. Leech.

C. H. Obert, of Rayonier, discussed bond paper quality, W. F. Cyrus of Crown Z, West Linn, talked on coated papers, James Ramsay Jr. of Everett Pulp & Paper, on writing and printing grades, Robert F. Lynch of St. Regis, on tissue; William W. Clarke of Longview Fibre, on cylinder board, and S. P. Strayer of St. Regis, on bag paper Papers were not available at press time for review.

Seattle Waiting Room No. 2 of the International Brotherhood of Migratory Peddlers put on its long-traditional "Wake-Em-Up Breakfast" show during which it initiated Gerald F. Alcorn, construction engineer, Weyerhaeuser's Pulp Division, as honorary member. He was presented with a giant slide rule. It was a tribute in effect, though done with light touch, to his direction of engineering of two recent new mills for Weyerhaeuser, part of the time simultaneously.

David W. Harris, Seattle manager, C. C. Moore & Co., is president of W.R. 2 and headed the show. Gordon B. Anderson, vice president, Puget Sound Sheet Metal Works, past prexy of W.R. 2, chairmanned registration, and others of W.R. 2 carried out necessary jobs to make the meeting a success.

William W. Clarke, paper mill superintendent, Longview Fibre, succeeded Gus Ostenson, manager of manufacturing, CZ, Camas, as Division chairman.

Biggest Tissue Machine Starts

WITH A SPEED potential so fantastic that industry observers expect it may be near or over 3,000 fpm before too long, Scott Paper Co.'s newest and biggest paper machine—No. 1 at Everett, Wash.—started up Dec. 8. It is no secret in the industry that this machine built by Beloit Iron Works to special Scott designs, is fully expected to easily shatter all world papermaking speed records.

Housed in a huge brick and concrete paper mill on Gardner Bay in the heart of Everett's waterfront, there are necessary base and supports already constructed alongside it for No. 2 machine, now being built and scheduled to roll in the spring.

This 193 in. trim, 206 in. wide No. 1 machine is 380 ft. long and is the biggest machine in the world making tissue. Pulp is pumped to it from the adjoining Soundview bleached sulfite pulp division and is processed through Shartle Selectifiers, a Curlator, and Morden Stock-Makers on its way to the big direct inlet nozzle—a Scott specialty—instead of a conventional inlet.

A special steel 12 ft. Yankee dryer of 80 lbs. pressure is followed by a big 2-stack calender on the machine, and then another 2-stack calender with the reel.



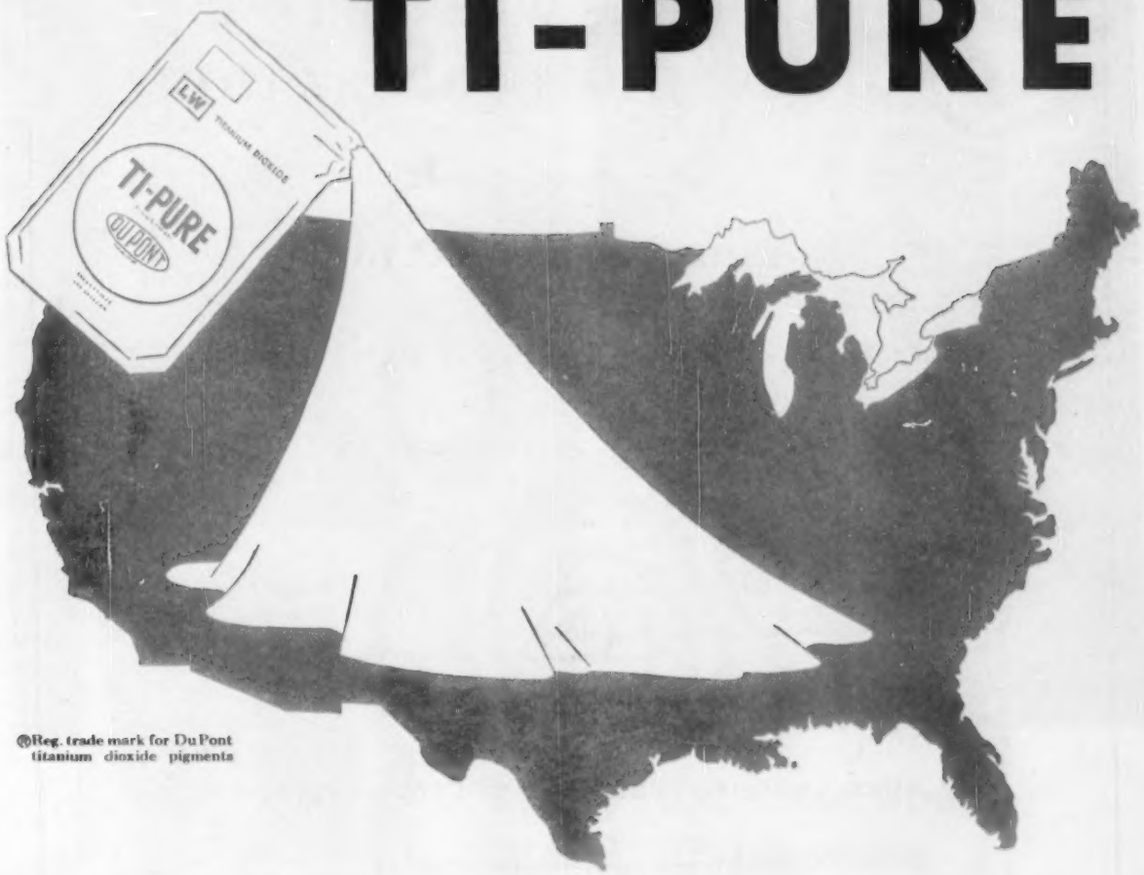
HERE ARE NEW LEADERS

THIS GROUP AT RIGHT ARE NEW AND OLD OFFICERS: Below: GUS OSTENSON, Crown Z, retiring Chairman; BILL CLARKE, Longfibre, new Chairman. Standing, l to r: MAX BAILEY, Westminster Paper, new First Vice Chairman; BURKE MORDEN, Morden Machines, Secy.-Treas.; JOHN VICTOR, St. Regis, Third Vice Chairman and was Convention Chairman, and J. B. BECK, Oregon Pulp & Paper, Second Vice Chairman.

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ON JANUARY 1, 1954 Du Pont will begin exclusive, national distribution of "Ti-Pure" titanium dioxide pigments to the paper industry. A record of over 20 years' successful performance has established "Ti-Pure" LW as one of the finest pigments ever offered to the trade. Whatever your pigment requirements you can count on satisfaction from Du Pont—the *one source* for "Ti-Pure" titanium dioxide pigments.

And remember, when you order "Ti-Pure" you also benefit from Du Pont's experience and technical facilities. Its modern laboratory, for example, is your assurance of getting expert technical aid when you need it—*and* a top quality pigment designed to do the job you have in mind. For more information, just call our nearest district office or write to: E. I. du Pont de Nemours & Co. (Inc.), Pigments Department, Wilmington 98, Delaware.

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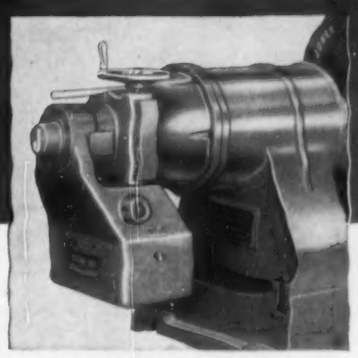
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Two E.D. Jones FIBREMASTERS® recently installed in a Western New York kraft mill for preliminary treatment of reclaimed bleached Kraft pulp. For maximum flexibility they are piped for single, series or parallel operation. Note small space requirements.



Now available with ACCRU-SET®
— automatic plug adjustment

This latest triumph of Jones engineering provides completely automatic, completely reliable finger-tip control of plug adjustment for uniform, predetermined power throughout your stock run. Guarantees more uniform stock treatment, less operating horsepower, protection for plug and shell bars if power or stock flow fails.

Easily installed on any Jones Jordan, Fibremaster or Refiner. Write today for details.

MINIMUM Floor Space MAXIMUM Results

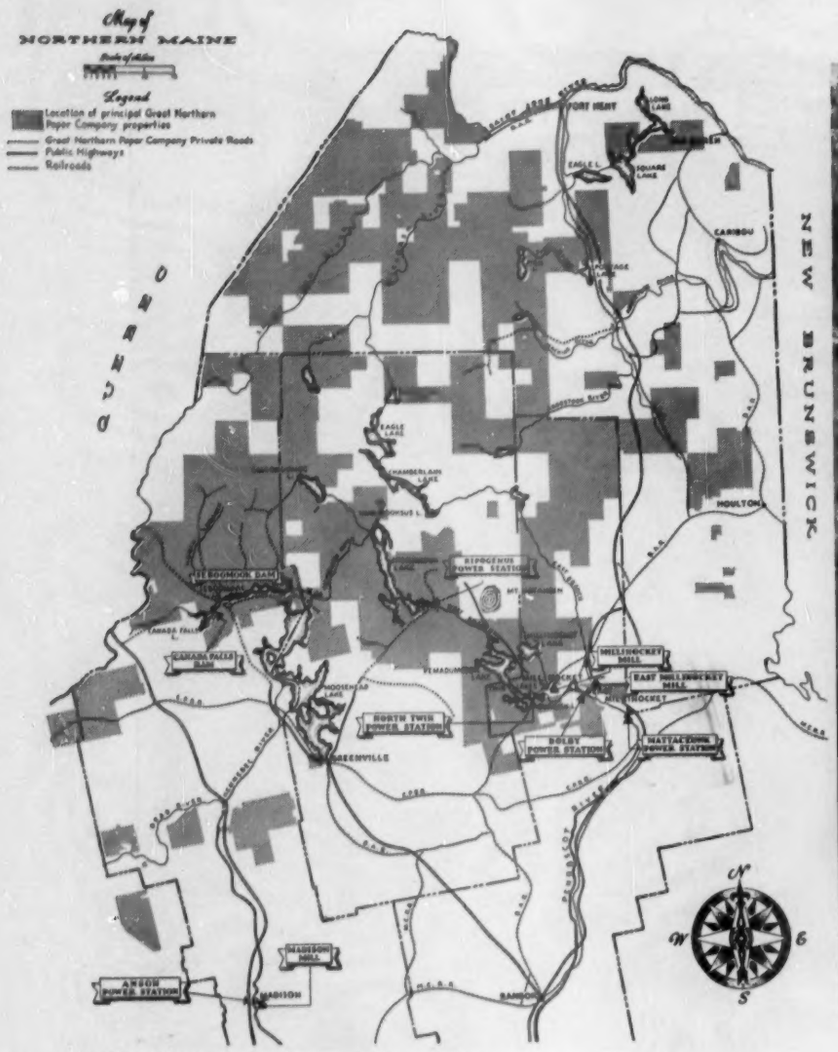
The simplified, rugged design of the FIBREMASTER requires relatively little floor space. Yet it has twice the capacity of the famous Jones High-Speed Refiner . . . and without sacrificing any of the features that have made the smaller machine so popular.

As a general utility unit on all stocks from news to rag, the Fibremaster combines flexibility, improved stock control, economy of power and low maintenance cost. Ask your Jones representative for details or write for Bulletin *EDJ-1035.*

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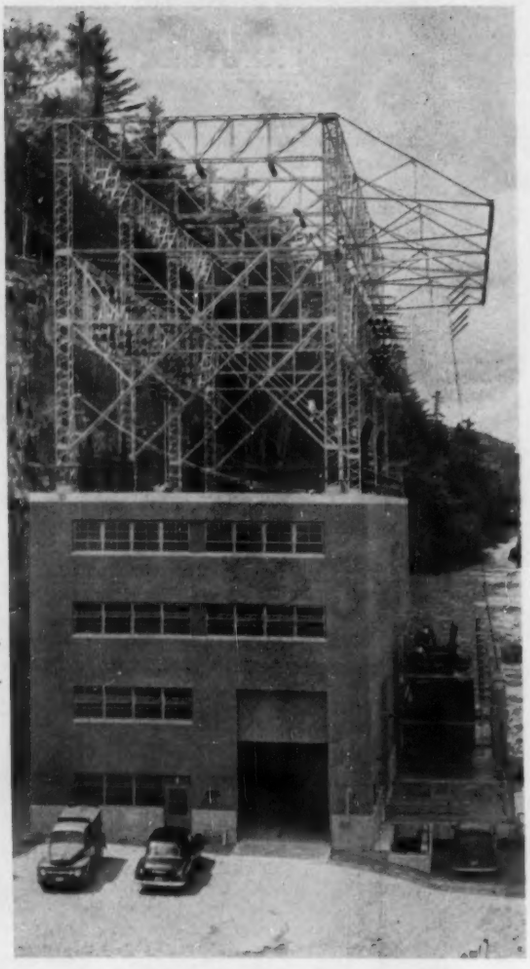
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BUILDERS OF QUALITY STOCK PREPARATION MACHINERY



WHERE PRIVATE POWER WAS CREATED

EXTENSIVE POWER DEVELOPMENTS of Great Northern Paper Co. can be seen in this map of northern Maine. The three mills being furnished power are at Madison, Millinocket and East Millinocket. Newest power unit—Ripogenus—is near center of the map.



HERE IS NEWEST ADDITION

This powerhouse at Great Northern Paper Co. near Ripogenus Lake, Me., adds 30,300 hp, for a total present power output from G-N hydroelectric units of 142,200 hp.

More Power to Great Northern!

WHEN THE SECOND unit of the Ripogenus hydroelectric development of Great Northern Paper Co. at Kokadjo, Me., went on the line June 2, 1953, it brought to successful completion an unusual power development for an American pulp and paper company.

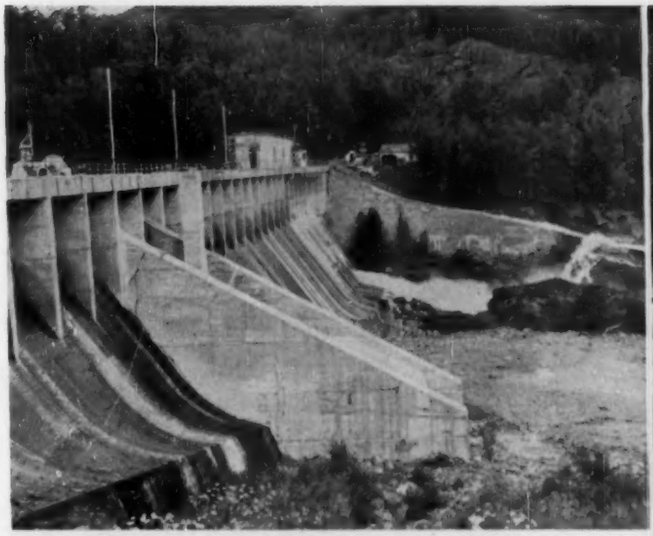
The new units at Ripogenus brought total hydro capacity of the six Great Northern power units to 134,688 hp. It called for boring through 4,000 ft. of solid rock from Ripogenus dam to the power plant, and for a 30.3-mile transmission line from powerhouse to substation at Millinocket, and 16½ miles of new access road.

Stone & Webster Engineering Corp. handled engineering and construction at the dam and powerhouse site, while Great Northern's own forces engineered and constructed the transmission line and access road. Total cost was approximately $8,000,000. Completion of Ripogenus gives Great Northern the following power units in operation:

No.	*Horsepower*
1 - Ripogenus	30,200
2 - North Twin	9,350
3 - Millinocket	42,500
4 - Dolby	18,450
5 - E. Millinocket	9,888
6 - Mattaceunk	24,300
Total Hydro Power	134,688

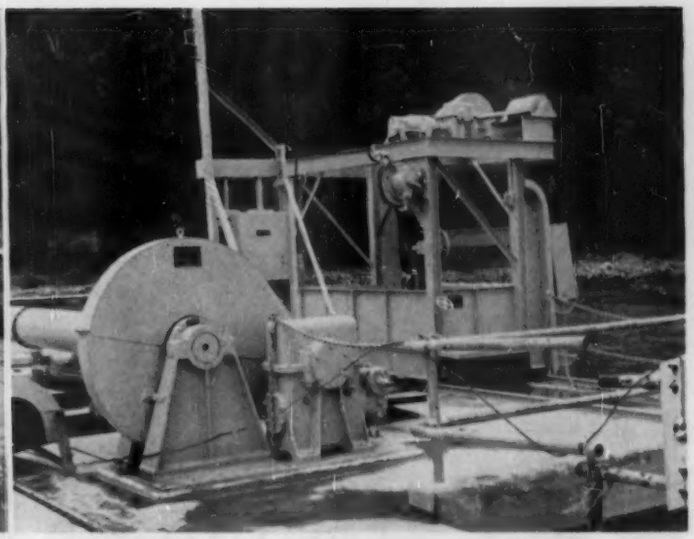
Additional installed capacity in hp at Kennebec brings total hydroelectric power developed by Great Northern to 142,200 hp. This is sufficient for all requirements of present mill capacities at Millinocket and East Millinocket, of 900 and 330 tons of newsprint per day respectively, and for 95 tons of groundwood printing and converting papers and sulfite specialties at the Madison mill. Power for the new plant at East Millinocket, which will increase newsprint capacity there to 900 tons, will be supplied by a high pressure steam plant.

Official starting date for the Ripogenus construction was March 29, 1951, with Great Northern crews doing some preliminary work on the right-of-way for the transmission line. In May Stone & Webster crews took over the construction of temporary buildings and commissary. Tunnel work by Savin Construction Corp. began in September; powerhouse excavation started in February 1952; dam buttress work started in May of that year; the tunnel excavation and penstocks were completed in June; the cofferdam was



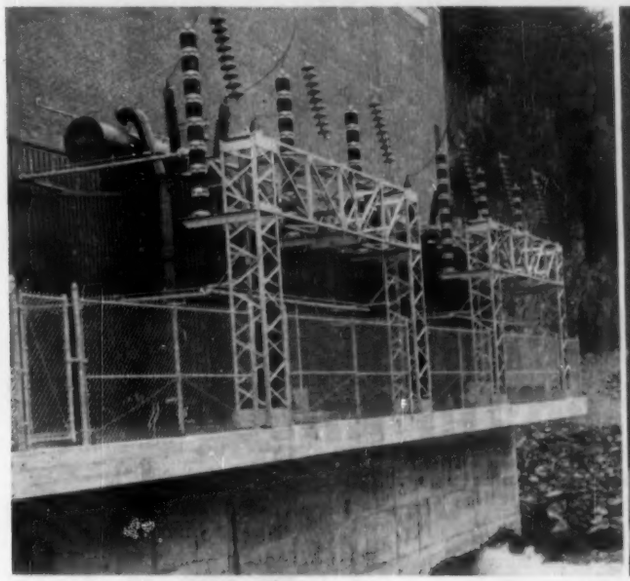
STONE & WEBSTER BUILT THIS DAM

CONCRETE WORK IN FOREGROUND is intake shaft from Ripogenus Lake to 4000 ft. tunnel leading through solid rock to powerhouse. At far side of dam is concrete spillway through which pulpwood logs are sluiced.



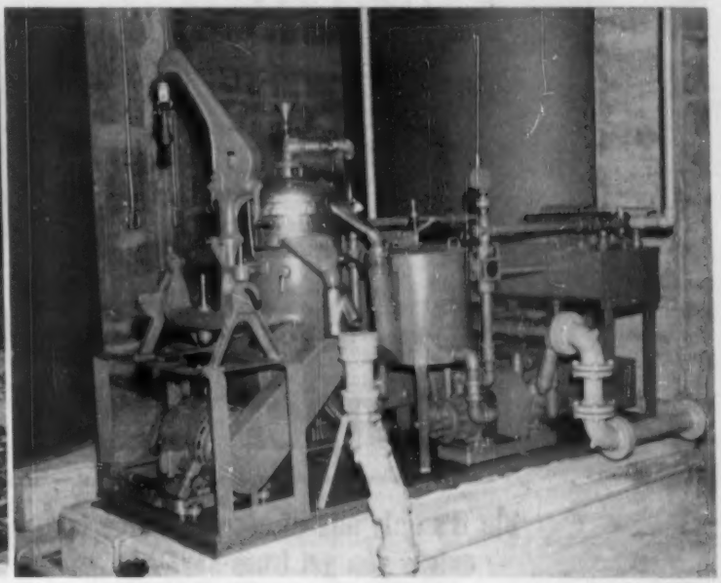
AND HERE IS 60,000 LB. HOIST

INTAKE RACKS AND GATE at Great Northern Paper's dam were manufactured by S. Morgan Smith. Shown here is the gate hoist, with 60,000 lb. capacity, with gear reduction unit supplied by DeLaval Steam Turbine Co.



THESE ARE G-E TRANSFORMERS

TRANSFORMER PLATFORM OVER 100 FT. LONG, now holds two General Electric transformers with room for a third. Water leaves the turbines below to enter the West Branch of Penobscot river.



AND THESE ARE THEIR OIL FILTERS

OIL FILTER SYSTEM for transformers at new Great Northern powerhouse was made by DeLaval Separator Co., and consists of oil centrifuge and filter press driven by General Electric motor.

completed and unwatered in August; the powerhouse was completed in November; the excavation for the tunnel was completed Christmas Eve in 1952; and the main tunnel and penstocks were tested and accepted January 8, 1953. No. 1 unit went on the line April 26, and on May 29, 1953 the second unit began operating. The plant was dedicated to William O. McKay, former G. N. president, now head of its executive committee.

Ripogenus Lake is formed by a dam built across the West Branch of the Penobscot River by Great Northern in 1916. At that time it was believed one of the largest private dams ever constructed in the U.S. The lake was used then, and still is, as a concentration point for pulpwood sluiced 30 miles from the dam to Millinocket. The previously mentioned 4,000 ft. tunnel through rock is for the intake shaft from the opposite side of the dam from the pulpwood chute to the powerhouse. It has an 18-ft. rough bore, in some places 250 ft. below ground surface.

Blast 37,000 Yds. of Rock for Tunnel

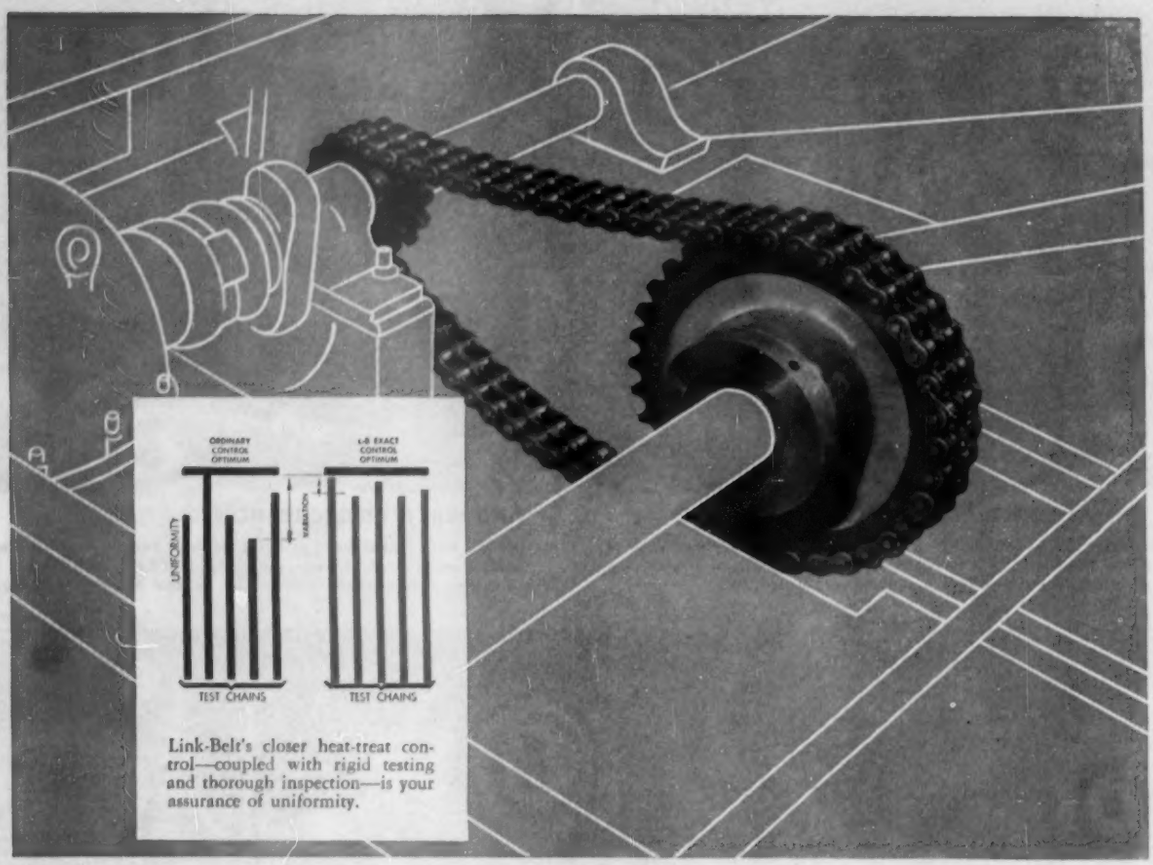
Before construction of the intake shaft it was necessary to construct a steel framework and concrete cofferdam at a 65-ft. depth of the lake, and to buttress the dam at this point. The cofferdam was unwatered through a hole drilled right through the existing dam.

An 18-ft. diameter shaft was sunk through rock to a depth of 83 ft., from which point the tunnel to the powerhouse begins. Intake racks and gate were furnished by S. Morgan Smith. The gate is a fixed-wheel type, 18 by 20 ft., with a 24 by 26 in. filler gate. The gate hoist has a 60,000 lb. capacity, and 1,647 ft. of trash racks filter entering water. Velocity through the gate is 5.6 ft. per sec. when both turbines are operating.

More than 37,000 cu. yds. of rock were blasted and excavated in drilling the tunnel. Approximately 200,000 lbs. of dynamite were used. The tunnel is lined with concrete and has a 0.3 percent grade drop.

Three concrete-lined penstocks lead from the tunnel, through which water travels at 12.7 ft. per sec. These convey water to turbines, of which two are now in operation, with provision for a third.

At 207 ft. above the tunnel and over-



Link-Belt's closer heat-treat control—coupled with rigid testing and thorough inspection—is your assurance of uniformity.

Closer heat treat control means longer roller chain life!

But it's only one of many engineering extras you get from LINK-BELT

THE long-life record of Link-Belt Precision Steel Roller Chain is based on more than closer heat treat control. Consider such extra-wear features as shot-peened rollers and lock-type bushings. They're further assurance of Link-Belt's *built-in* extra life.

Link-Belt Roller Chain is available in single or multiple widths, ⅜" through 3" pitch. Double pitch, 1" through 3". For all the facts, call the Link-Belt office or distributor near you today, or write for Data Book No. 2457.

LINK-BELT

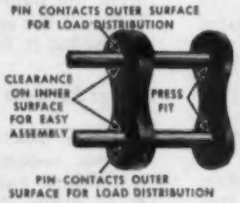
ROLLER CHAIN & SPROCKETS

LINK-BELT COMPANY: Plants: Chicago, Indianapolis, Philadelphia, Colmar, Pa., Atlanta, Houston, Minneapolis, San Francisco, Los Angeles, Seattle, Toronto, Springs (South Africa), Sydney (Australia). Sales Offices, Factory Branch Stores and Distributors in Principal Cities. 13,120-A

Don't overlook these other LINK-BELT extras



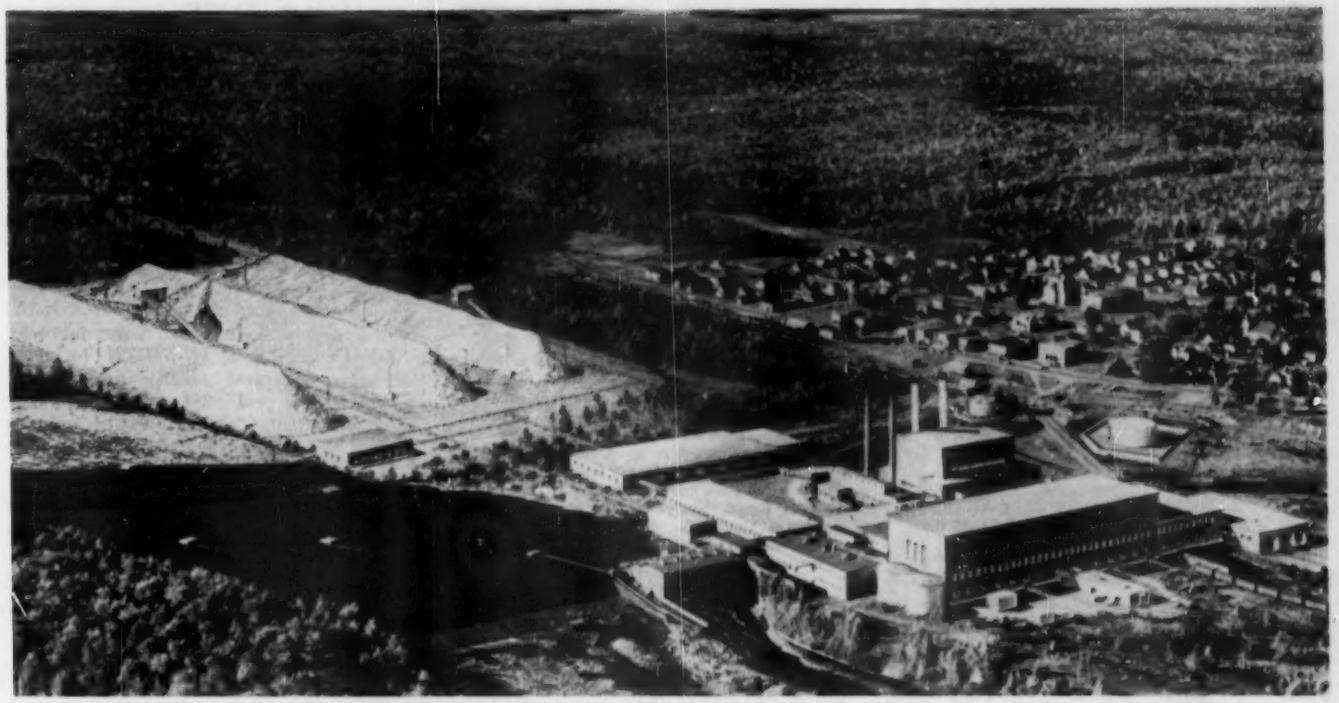
Shot-peened rollers have extra fatigue life for higher speeds, heavier loads.



Couple, uncouple multiple-width chains easily.



Lock-type bushings assure free articulation.



FOR THIS EXPANSION AT MILLINOCKET—EVEN MORE POWER IS NEEDED

THIS IS AN ARCHITECT'S drawing of Great Northern's expansion which will boost newsprint capacity at East Millinocket, Maine, from 300 to 900 tons daily, equalling present size of mill at Millinocket. Large Machine Room at right will house two new high speed Beloit 276-in. machines. Behind it—new Steam Plant with two high pressure boilers. At left of center is projected Grinder Room expansion and completed Hardwood Pre-Treating Plant. To far left—new Woodroom. Much of the pulpwood is driven to the mill by way of the West Branch of the Penobscot river from Ripogenus lake.

looking the powerhouse is a restricted orifice-type surge tank. This relieves back pressure on the tunnel. The height of the lake, when full, is 12.5 ft. above the base of the surge tank.

Turbines Rate 15,000 hp Each

Two S. Morgan Smith Co. turbines have a capacity of 15,000 hp each. They operate at 266.7 rpm, requiring 1,000 cu. ft. per sec. of water. General Electric generators turn out 13,500 kva each—and are 40 cycle, 3 phase units, generating at 6900 volts.

Net operating head at the powerhouse is 165 ft. with both units operating. Height of the full lake above normal tailwater from turbines is 184 ft. Two General Electric transformers are on a platform running the outside length of the building over the Penobscot River. They are each 13,500 kva size, with room on the platform for a third. A Grinnell water fog system just inside the power plant from the transformers is designed for automatic fire control. A DeLaval Separator Co. oil filter system, consisting of centrifuge and filter press, is on the lower floor and filters oil to the transformers.

The construction camp for the workers consisted of five separate bunkhouses for 40 men each, and a kitchen and mess-hall to feed 300 men at one time, designed for conversion of bunkhouses into single homes and the commissary into a duplex apartment for permanent employees.

No small feat was construction of the 30.3-mile 115,000 volt transmission line to the Millinocket sub-station, requiring 600 holes for structures, all but nine of them requiring blasting. Wood "H" frame structures of creosoted Southern Pine were used, except for long river spans, where steel towers were erected.

The original road from Millinocket to Ripogenus was a winding 40 miles. To shorten this about 16½ miles of new gravelled access road was built at $15,000 per mile, reducing the distance to Ripogenus by 20 miles.

The Penobscot was spanned at Abol with a bridge consisting of two 150-ft. steel truss spans.

Adding Capacity at East Millinocket

This power development by Great Northern is further testimony of the faith of the company in the woodlands future of Maine. The company owns 2,269,674 acres of forest land in the state, and with completion of expansion at East Millinocket, will have capacity for 1800 daily tons of newsprint. The power development, as stated, cost approximately $8,000,000, and the entire program at East Millinocket will cost about $32,000,000.

Stone & Webster Engineering Corp. is carrying out this construction. First step is a complete new woodroom, with the old one converted to a water treatment plant. A grinder room, equipped with Great Northern grinders, will be built north of the existing grinder room to handle either hardwood or softwood. The new machine room will house two Beloit 276-in. high-speed newsprint machines. A new boiler house will house two high pressure boilers, two 12,500 kilowatt turbines, and auxiliaries. New finishing room and trainshed will be provided.

An important addition in the past year at Great Northern was its own design 50-ton plant for production of pre-treated groundwood pulp from hardwood. It uses two horizontal pressure vessels and one Great Northern grinder.



HEADED FOR KETCHIKAN MILL

SNAPPED BY PULP & PAPER recently, these six young chemists will work under Gen. Supt. S. E. Hazelquist at the new Ketchikan Pulp Co. mill at Ward Cove, Alaska. From left, DONALD PEARSON, graduate of Univ. of Washington, Tech. Dir.; GEORGE NELSON, Univ. of Washington, Proj. Chem. Engr.; PAUL E. JACOBSON, Univ. of Illinois and Northwestern, Chemist; JACK SMITH, Washington, Jr. Chem. Engr.; RICHARD HOPSON, Rensselaer Poly. Inst., Proj. Chem. Engr.; JOS. KOLBERG, Univ. of British Columbia, Proj. Chem. Engr.

Personals

MIDDLE WEST

Reif Announces Meeting Dates

MYLES W. REIF, vice president and general manager, Blandin Paper Co., announces May 6-7 is set as dates for the Spring meeting of the Northwestern Superintendents and the site chosen is the Leamington hotel in Minneapolis.

JOHN E. LEAN, formerly at Harvey Paper Products in Sturgis, Mich., has become new vice president and general manager of Rex Paper Co., Kalamazoo.

JAMES R. VERDON, Kalamazoo, has accepted appointment as Midwest representative of F. C. Huyck & Sons.

CHARLES KELLEY, Jr., a veteran representative for H. Waterbury & Sons, of Oriskany, N.Y., is moving to the Middle West to take over that territory for the felt makers. He was expecting to locate at Benton Harbor, Mich., early in the year.

JOHN GERHAUSER of Appleton Wire Works and *FRANK HALLOIN* of Wisconsin Wire Works made talks recently before the Combined Locks Foremen's Club in Kaukauna, Wis.

HENRY CRANDALL, of Mosinee Paper Mills, has been elected treasurer of the Upper Mississippi Valley section of the Forest Products Research Society.

JAMES STEWART CLEMONS, for many years with Hummel & Downing, now Cornell Paperboard Products, Milwaukee, died at Lake Luzerne, N.Y., on Oct. 27 at the age of 78.

LEO FITZGERALD, Hercules manager in Milwaukee, for the Northwestern division; *CARL HOELDERLE*, Anheuser-Busch's "Mr. Budweiser" of Kalamazoo, for the Michigan division, and *TANY AGRONIN*, Shartle chief engineer, for Miami Valley, are named affiliates representatives for the Superintendents.

CHARLES A SANFORD is new manager of industrial relations for Nekoosa-Edwards Paper Co. Graduate of U. of Michigan Law School '35, he has held several top posts in a Cleveland manufacturing firm. *W. R. CAHILL* continues as personnel director.

FRANK A. JANSON, P.O. Box 553, Appleton, Wis., head of Janson Engineering Inc., is now representing Warren Steam Pump Co., Inc., in the state of Wisconsin.

TAD R. MEYER, public relations and advertising manager, Nekoosa-Edwards Paper Co., was recently elected to the board of directors of the Direct Mail Advertising Assn.

HARRY DEYO, who worked in lab and finishing before going into accounting and becoming assistant treasurer of Nekoosa-Edwards, was given a watch and wallet by associates when he retired.





FOR DUPONT AND ORR FELT

P. DEAN GRAHAM (left), who has moved to Kalamazoo, is newly appointed Sales Rep. for Michigan and Ohio areas for Pigments Department of E. I. du Pont de Nemours & Co. He is 32, born in DeLand, Fla., graduated from U. of Florida in 1942 when he joined DuPont in an Alabama Ordnance Works. Since Navy service in the war, he has been a chemist at Newark Pigments Plant.
LUKE THIEL (right), has joined the felt sales force of Orr Felt & Blanket Co., Piqua, Ohio. He has had long experience in machine clothing sales and paper mills. President M. B. ORR made this announcement.

EDWARD C. RONEY, president of a Detroit automobile sales firm, is a new director of River Raisin Paper Co.

RALPH D. MAIN, an officer of Minnesota & Ontario Paper Co. since 1941 and vice president since 1951, a native of Glasgow, Scotland, died Nov. 13 in Minneapolis.

BENJAMIN RILEY, graduate of Rensselaer Polytech, who came to Gardner Board & Carton from New York in 1950 as industrial engineer, is new assistant supt. of its Lockland, O., carton plant.

THE SOUTH

Superintendents Change Locales

A. T. GARDNER, machine coating specialist formerly at Crown Zellerbach, West Linn, and lately at Cornwall and St. Catherine in Canada, met many old friends at the Houston Alkaline meeting. He is paper mill consultant for The Champion Paper & Fibre Co. at its Pasadena, Tex., mill.

JOHN E. CAMPBELL, agent for International Paper Co. at its Camden, Ark., mill, was recently busting vest buttons when his boy, Raymond Campbell, made fifth out of 16 boys picked for Who's Who in American Colleges from Louisiana Tech.

PHIL A. BACHELDER, secretary and assistant treasurer of Coosa River Newsprint, has seen a lot of U.S.A. in his industry career, starting in Maine with S. D. Warren and going to Kimberly-Clark in Wisconsin on his zigzag way South.

HARVEY K. WATERS, Michigan College of Mining & Tech. graduate '48, moved to Birmingham, Ala., Nov. 1, to represent Swenson Evaporator in the Southeast—Fla., Ala., Ga., So. C., East Tenn., and East Miss. He was born in Calumet, Mich. and has been with Swenson five years

GEORGE KLEINMAN, Illinois Inst. of Tech. grad of 1949, moved to Houston for Swenson to cover Tex., La., West Miss. and So. Ark. He was born in Chicago, has been with Swenson since 1949.

WILLIAM B. JINKINS has been named paper mill superintendent at Southland Paper Mills. He had been assistant superintendent, a position to which he was promoted when *A. B. MORRE* became assistant to the general manager of the Crossett Companies. As paper superintendent he succeeds *R. W. BURNETT*, who became paper mill superintendent at Hudson Pulp & Paper, Palatka, Fla. *A. W. DUSKIN*, Technical service director for Crossett, became assistant paper mill superintendent. Also named assistant paper superintendent was *A. G. McCAUGHAN*, whose post as tour foreman was filled by *ROY COLLINS*. *E. H. SMITH*, formerly assistant technical service director for Crossett, was promoted to assistant paper superintendent. *C. L. BROWN* became assistant technical service director.

J. BORDEN JEFFERY, native of Canada where he started with Spanish River, is new paper mill superintendent of Coosa River Newsprint Co., Coosa Pines, Ala., succeeding *JAY CRITTENDEN*, who has accepted the post of paper mill superintendent for the new Bowaters Southern Paper Corp. mill starting up this spring at Calhoun, Tenn. Mr. Crittenden was at Lufkin, Tex., before Coosa River as superintendent. Mr. Jeffery was at Coosa since its start-up.

ALBERT E. LOGAN, head of heat and power engineering for Buckeye Cellulose Corp., subsidiary of Procter & Gamble, has been transferred from Ivorydale, Ohio, to the new Buckeye dissolving woodpulp mill being built at Foley, Fla.

J. B. GILBERT, treasurer and director of Sonoco Products, Hartsville, S.C., since 1923, died Oct. 8 after a long illness.

FRANCIS W. KELLEY, newly appointed secretary-treasurer of Southern Division Superintendents, is industrial relations manager for Union Bag at Savannah.

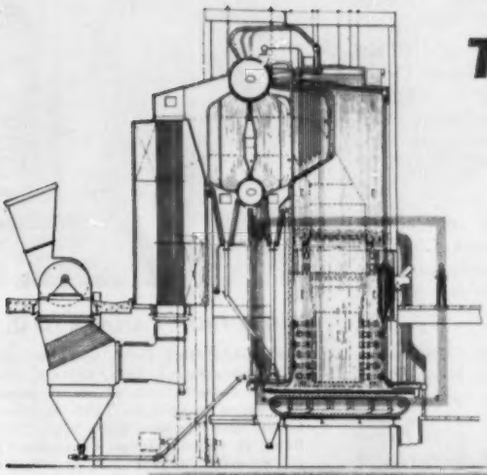
CHARLES P. KIRCHEN, Buckman Laboratories, and *ED M. ROOT*, Black-Clawson manager in Atlanta, are respectively Southern and Southeastern Division Superintendents affiliates representatives.

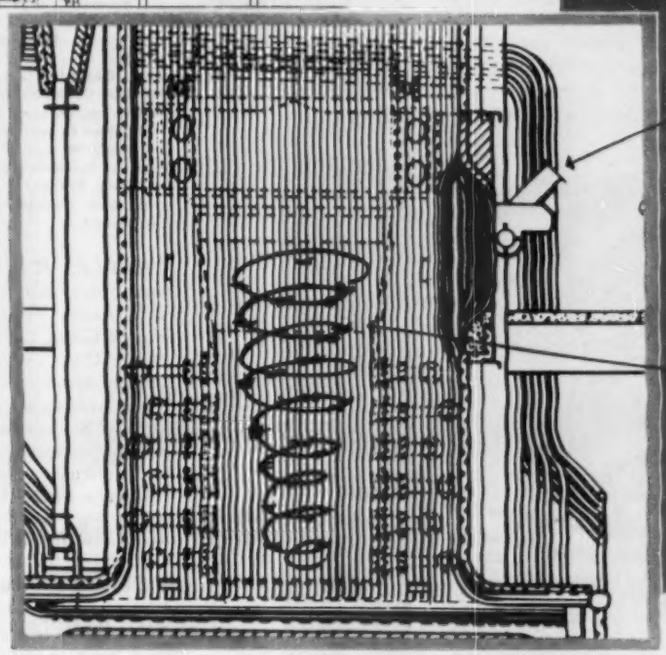


SERVE SOUTH FOR POWELL VALVES

CARL L. NOE (left), who moves to Mobile, Ala., from Tennessee, and LEE E. CEARNAL (right), of Jacksonville, Fla., are newly appointed Sales Representatives in the South for Powell Valves, according to President JAMES COOMBE, of The William Powell Co., Cincinnati, makers of precision valves. Mr. Noe, formerly in procurement work at Oak Ridge, will cover mills in south Alabama and Mississippi and western Florida. Mr. Cearnal, who has been with a machinery firm, will cover east Florida and south Georgia and South Carolina.

This C-E combination gets the most out of bark





With a C-E Bark-Burning Unit you can burn bark, hogged wood, or other cellulose fuels with exceptional efficiency and reliability. By performing two operations simultaneously — flash drying and combustion — it converts waste wood into a fully effective fuel. Here's how it works . . .

Bark or other wood waste is introduced into the furnace by special spreader units located considerably above grate level. At the same time, extreme turbulence is produced in the furnace by blowing tangentially directed streams of preheated air through rows of nozzles at various furnace levels.

Thus the fuel is fed into an area of violently swirling air, preheated to a temperature of several hundred degrees. Under these circumstances moisture evaporates almost instantly — and nearly all of the flash-dryed fuel burns in suspension. The small remainder falls to the grate in an even layer, where it is quickly consumed.

Both Eastern and Western waste woods are being burned with complete satisfaction by this Combustion equipment and at substantial savings over any previous method. The unit shown here, for example, is designed to produce 125,000 pounds of steam per hour at 875 psi and 825 F when fired with bark, and is arranged for the use of oil or gas as alternate fuels.

The exceptionally high availability and outstanding performance of C-E Bark-Burning Units now in service in several sections of the country are your keys, too, to the effective and profitable use of wood waste. To help you plan how this equipment can serve you best, Combustion engineers are freely available to you, your engineers or consultants.

COMBUSTION ENGINEERING

C-E

B-713

Combustion Engineering Building • 200 Madison Avenue, New York 16, N. Y.

BOILERS, FUEL BURNING AND RELATED EQUIPMENT; PULVERIZERS; AIR SEPARATORS AND FLASH DRYING SYSTEMS; PRESSURE VESSELS; AUTOMATIC WATER HEATERS; SOIL PIPE

Personals

CANADA

Name New Mill Managers

DR. GORDON I. HOOVER has been appointed manager of Provincial Paper's *mill at Thorold, Ont. He continues as technical director at Georgetown, Ont., but relinquishes his duties as manager of the* coating mill where D. R. DUNCAN has *been named as general superintendent.*

R. R. HOLMES, formerly resident *manager for Abitibi Power & Paper Co.* at Smooth Rock Falls, Ont., has been named *resident engineer for Provincial Paper* Co. at Thorold.

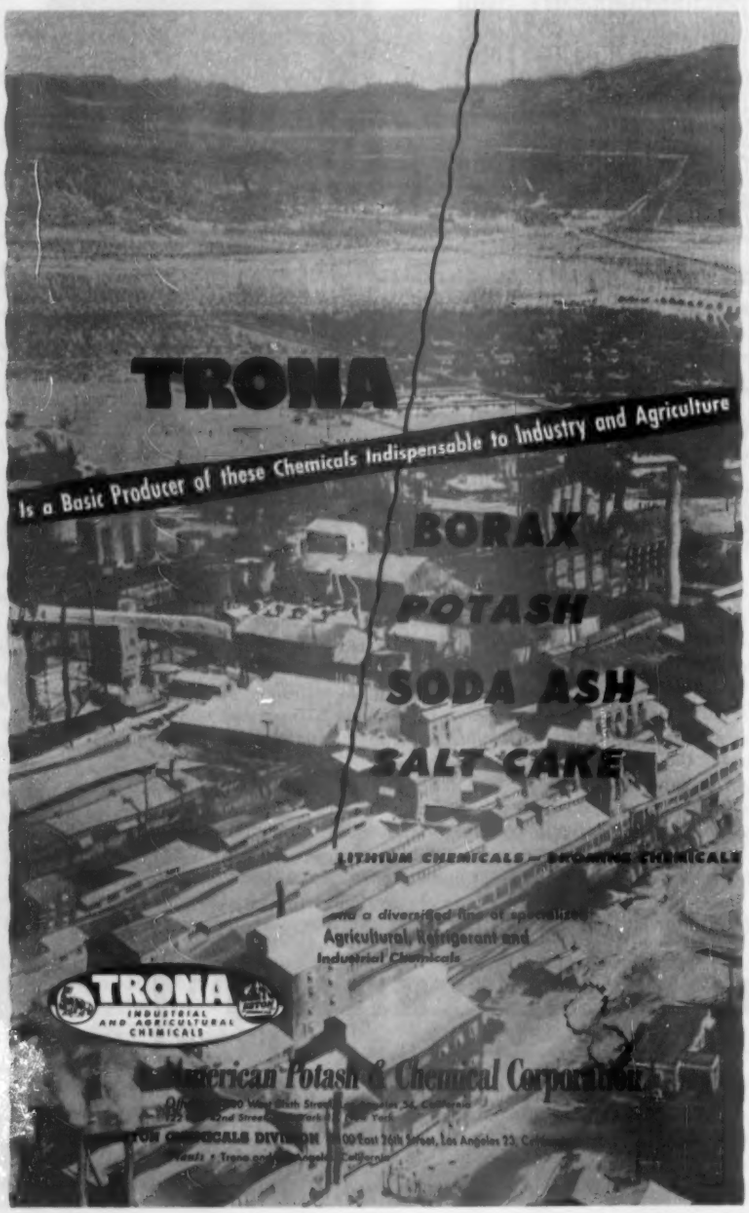
R. L. FRASER is the new mill manager of Manitoba Paper Co., Abitibi's subsidiary at *Pine Falls, Man. He is chairman of the Technical Section CPPA, and will be* general chairman of the 1954 meeting in *Montreal.*

TOM SHEPHERD is new *groundwood superintendent* of Donnacona Paper Co. at Donnacona, Que., according to *LESLIE PALMER,* vice president and mill manager. TOM DOBSON has been appointed *chief chemist* and *ROBERT MAEDER* control superintendent.

GORDON SUTTON, former general superintendent of St. *Lawrence Corp. at* Dolbeau, Que., has been made assistant manager of Abitibi's Thunder Bay mill at *Port Arthur, Ont.*

J. G. WYLLIE, assistant general manager and secretary of Bowater's Newfoundland Pulp & Paper Mills, *has resigned.*

MARK WATSON, formerly with Howe *Sound Pulp Co., MacMillan & Bloedel* and B.C. Bridge & Dredging Co. in a super*visory capacity, has entered equipment* distribution business in Vancouver, B.C.





MOVE FROM CANADA TO U. S.

ALEX GLASSMAN (left), who has joined staff of R. R. Donnelley & Sons, Chicago, one of world's *biggest manufacturers of coated paper magazines,* has moved to Chicago (7516 So. Essex) from Three Rivers, Que. He was Asst. Supt., *Technical Service Dept., St. Lawrence Corp. He graduated from McGill* U., Montreal, in 1946 and has been with St. Lawrence mills *since then. He gave a paper two years ago at the Montreal convention on paper printability.*

A. T. GARDNER (right), now Paper Mill Consultant* for The Champion Paper & Fibre Co., Pasadena, Texas, was on hand at the Alkaline pulping *meeting in Houston to see old friends. A coating expert with* 15 years at Combined Locks, then five years as Supt. at Provincial, *Port Arthur, then as Asst. Supt. at Crown Zellerbach at West Linn, Ore., he recently* was with Canadian mills in Cornwall and St. *Catherine's.

CHARLES *HARRISON, traffic manager,* and other key office personnel formerly at Toronto head office, have *moved to* Fort William, Ont., where the Great Lakes Paper Co.'s mill is located. It was pre*viously announced that C. J. WARWICK* FOX, brother of PERCY M. FOX, presi*dent of St. Lawrence Corp.,* had been appointed to the new post of vice president *and general manager. He has established* residence at Fort William.

JOSEPH S. SAMPLE, 30-year-old Chicago advertising executive, is the latest *addition to the board of* Powell River Co., Vancouver, B.C. He succeeds his father, *J. G. SAMPLE, who retired. JOE SAM*PLE worked at Powell River in 1941, then *served with the U.S. Army and OSS in* China and Formosa, graduating in 1947 from Yale.

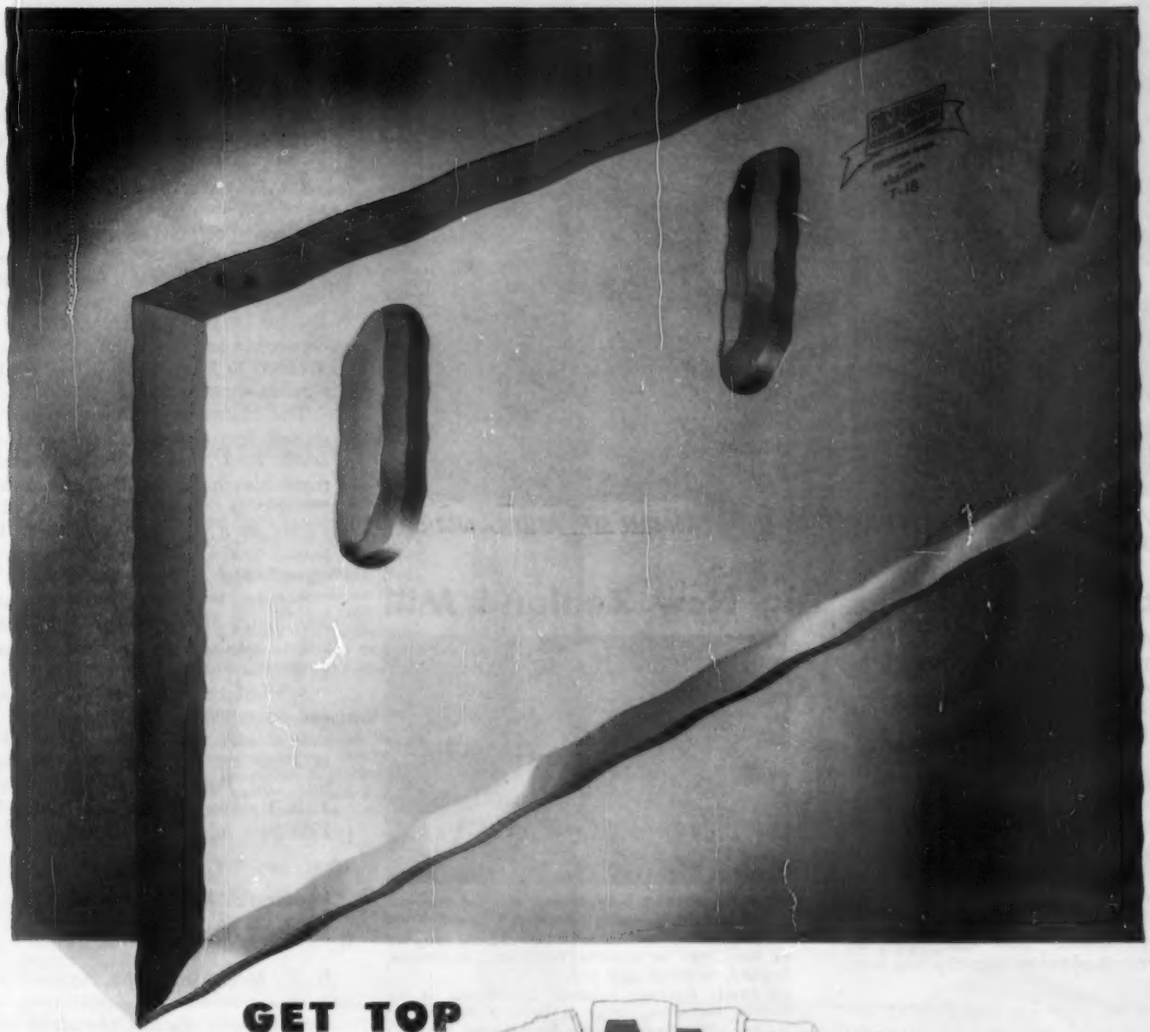
PACIFIC COAST

A New Home for Natwicks

BENJAMIN E. NATWICK, Pacific Coast *representative for* Appleton Wire Works, and his wife, Ope, have moved from their *home at Pumpkin Center, west of* Camas, Wash., to a new residence at 600 South Andresen Road, Vancouver, Wash., *which* overlooks the Columbia River.

H. C. OSBORNE, General Dyestuff Corp., Portland, Ore., has been appointed industrial affiliates representative for the Coast Superintendents Division.

IVAN E. NICHOLS has succeeded the late *LESTER E. REMMERS,* who died of a heart attack in October, as resident manager of the Crown Zellerbach con*verting division at Los Angeles,* which is being expanded. He was assistant man*ager at the Carthage, N.Y.,* mill.



GET TOP

CHIP QUALITY

. . . get the Top Knife for TOUGHNESS . . .

SIMONDS T-18 CHIPPER KNIFE

Your percentage of uniform chips that get through screening and into the cooker . . . that's what determines profit or loss in your wood room. And with wood such a big factor in paper-making costs today . . . it doesn't pay to get less than the best in chipper knives.

That's why you find Simonds T-18 Chipper Knives in modern, cost-conscious pulp mills all over the country. For these extra-tough knives hold their cutting edges far longer . . . and consistently turn out *clean-cut chips.* Slivers, sawdust and bruised chips are reduced to a minimum. Made of special Simonds T-18 Steel that's known for its ability to take the high speed, brutal beating of chipper operation, *Simonds Chipper Knives give you one of the most effective cost-control systems you can install in your mill.* See your dealer today.

SIMONDS
SAW AND STEEL CO.
FITCHBURG, MASS.

Factory Branches in Boston, Chicago, San Francisco and Portland, Oregon. Canadian Factory in Montreal, Que.
Simonds Divisions: Simonds Steel Mill, Lockport, N. Y., Simonds Abrasive Co., Phila., Pa. and Arvida, Que., Canada



EXCLUSIVE AIR VIEW TO PULP & PAPER OF NEW TASMAN SITE AND CONSTRUCTION WORK ON MILL AND TOWN

Manager Named for Big New Zealand Mill

MAURICE HOBDAY, whose family has been in paper-making for six generations, is the general manager of Tasman Pulp & Paper Co., which will start producing pine groundwood, semi-bleached Kraft and newsprint in New Zealand during the summer of 1955.

Mr. Hobday, 52, crossed Canada, on his way to his new post, and he told PULP & PAPER that he would soon be followed to New Zealand by technical personnel from Abitibi Power & Paper Co., which has a management contract for the new company "down under" that will continue until 50 percent of rated capacity has been attained.

To accept his new job Mr. Hobday resigned as general manager of Imperial Paper Co., Gravesend, near London, a company which for many years has obtained some pulp from a subsidiary, Gulf Pulp & Paper Co. at Clarke City, Que.

As a youth, Mr. Hobday went to sea as a ship's apprentice but soon gravitated to paper making. During the war he was a gunnery officer on the converted Cunarder Aquitania.

"When Tasman goes into production it will culminate a program initiated by New Zealanders nearly half a century ago when they planted Kaingaroa State Forest with Monterey pines from California, from which we will get most of our raw material," said Mr. Hobday.

His grandfather in 1875 operated a newsprint mill near Dover with a machine operating at 200 f.p.m.

Most permanent operating personnel for the Tasman company has yet to be chosen. However, several technical men have been named to the project by Sandwell & Co., consulting engineers for the enterprise.

E. S. Barton, Vancouver, B.C., is resident engineer; C. Victor Rapson of Auckland is civil engineer; Robert D. Wilson, formerly of Boyer, Tasmania, electrical engineer; Thomas J. McKie, of Wanganui, N.Z., field engineer; James G. Brown, Auckland, N.Z., cost control engineer.



MAURICE HOBDAY (left), is new General Manager of Tasman Pulp & Paper, new mill in New Zealand which starts making newsprint in 1955. He resigned as Gen. Mgr. of Imperial Paper Co., Gravesend, England, to accept new post.
SIR JAMES FLETCHER (middle), is Chairman of the Tasman enterprise, which is building its mills in the Bay of Plenty area on the North Island. EDWARD BARTON (right), is Resident Engineer for Tasman. A British Columbian by birth, he went to the new site in Mar. 1953 to supervise operations for Sandwell & Co., of Vancouver, B. C. and Seattle, consulting engineers for the project, later becoming Resident Engineer.

A new town—Onepu—which may have 6,500 population, is being built at the mill site, near Te Teko. Overall cost of mill, port and road is estimated at $85,000,000 of which $45,000,000 is for the mill.

A British made machine will make 220 tons a day of newsprint; later there will be two machines. An excess of 150 tons a day of unbleached kraft pulp will be sold.

W. H. Rambo of Portland, Ore., designed the sawmill and Sandwell & Co., of Vancouver, B.C., and Seattle are general consulting and design engineers A Flakt dryer, Impco washers and knotters, big General Electric grinder drives and Simons hydraulic barking are being supplied but most of the rest of the equipment is from England.

Sumner Chippers in Ontario

A 66 in. Sumner chipper has been shipped to Abitibi Power & Paper Co.'s Thunder Bay, Ont., mill. Installations of similar equipment were previously made at Great Lakes Pulp & Paper and Northern Pulpwood Supply, both at Fort William, Ont.

Pennsalt Offers Chlorine Dioxide System

Pennsylvania Salt Manufacturing Co. offers an efficient chlorine dioxide generation and bleaching system including technical and engineering service on all chemicals and equipment.

Pennsalt studied and developed chlorine dioxide generation processes because of its basic position as a producer of chlorates, one of the essential chemicals in the process. Pennsalt has been a supplier of chlorine and other chemicals to the industry for 50 years. Patent immunity rights on certain aspects of the system have been granted to Pennsalt and its clients under agreement with Mathieson Chemical Corp.

The chlorine dioxide generator is designed for economical installation in a small area within existing buildings of most bleach plants. The generator itself consists of one lined steel tank which operates as a continuous process. Generation, however, may be started or stopped at will, and its rate varied.

Simple automatic control equipment eliminates any need for additional labor. Safety equipment makes it commercially practical.

A transportable pilot plant unit which can be set up in plants on a test basis is available from the Tacoma, Wash., office of Pennsalt. See complete description of this and Pennsalt studies in article by J. B. Heitman of Pennsalt (page 72, July 1953 issue of PULP & PAPER.)

Monroe, Mich., Plant Makes New Products

H. R. McGOVERN, who resigned recently as vice president, manufacturing, of River Raisin Paper Co., is president of newly formed Ace Paper Products Co., 7986 No. Telegraph Road, Monroe, Mich., organized for specialized service to smaller companies in this industry and for direct sales to users of die-cut solid fiber and corrugated board.

Mr. McGovern was with River Raisin 32 years and formerly was general superintendent of its three container plants.

L. J. Timmins is vice president and V. E. Fleure is secretary-treasurer of Ace Paper Products. This group has had many years experience in the industry. It capitalized at $160,000 with 16,000 shares, $10 par each. The plant has 5,000 sq. ft. manufacturing space with room for expansion.

"We have felt the need for this service for a long time," Mr. McGovern told PULP & PAPER.

"We are placing on the market an expendable paper pallet for which we have sole manufacturing rights from patent holders. We will stock and silk screen, when desired, a point-of-purchase floor display stand of corrugated board.

"We have installed a 50 x 80 Sheridan press and have ordered a 33 x 47 Thompson National jaw press. We are primarily interested in die-cutting and scoring and will be prepared to stitch beverage cases. We have a very complete die-making department."

Personals





TAKE NEW POSTS IN FAR WEST

TOM B. SCARFONE (left), of Portland, Ore., engaged as new West Coast Sales Representative for two important suppliers—EASTWOOD-NEALLEY CORP., Belleville, N.J., wires manufacturer, and UNION SCREEN PLATE CO., Fitchburg, Mass. These are lines long represented by now dissolved Pacific Coast Supply Co., where Mr. Scarfone was Sales Engineer for five years. Graduate of Oregon State, he served in the Navy as Lieut. and Chief Engineer of an aircraft carrier. He was Design Engineer two years at Crown Z's West Linn mill.

SIDNEY M. COLLIER (right), newly appointed General Sales Mgr. of Metal Sales Co., Kirkland, Wash., which is across Lake Washington from Seattle. He was recently Supt. with MacMillan & Bloedel pulp mill, Harmac, B.C., and former Assistant Supt. at Puget Sound Pulp & Timber. He is a native of Washington state.

NEWBEY A. GREEN has been named resident manager-sales for Crown Z in Southern California. He started with Crown as a surveyor in Cathlamet, Wash., logging operations.

WILLIAM WOODS is general manager of Personal Products Corp.'s new converting plant which will start operations at Sunnyvale, Calif., in mid-1954. This company is a converter of quality sulfite pulps. Mr. Woods was general foreman of its Milltown, N.J., plant.

JON R. TITCOMB, manager of Weyerhaeuser's Springfield, Ore., lumber division and with Weyerhaeuser since graduating from Dartmouth in 1924, has moved to Tacoma headquarters to be assistant to Vice. Pres. and Gen. Mgr. *CHARLES H. INGRAM*.

G. E. UHLIG, H. R. AMBUEHL, R. C. ZIMMERMAN, and *JAMES B. ESSELMAN* (the latter formerly of Nekoosa-Edwards Paper Co.) are new shift recovery foremen for expanded Longview Fibre Co. operations at Longview, Wash. *R. WIRTZ, H. D. SHERIDAN* and *C. A. BACON* have named new shift chemists; *R. A. STRUP* and *L. E. CARPENTER* as department foremen; *H. HINCK*, shift box shipping foreman; and *L. H. LAUBOCKER*, cost analyst of accounting department. *M. J. THOMPSON, JR.* has transferred from Longview Fibre's Los Angeles division to Longview as box planning supervisor. *N. H. JOHNSON*, formerly of maintenance department, was named maintenance planner.

Continued on page 110



MID-CENTURY CONFERENCE

Continued from page 88

the pattern of forest landownership be studied by congress and states to determine what adjustments, if any, should be made. The goal—to enable both public and private owners and to make public lands fully productive.

Regarding National Forests, there appeared agreement on need for (1) building timber access roads, (2) simplifying timber sale procedure; (3) speeding up timber inventories; and (4) doing more advanced engineering and timber management planning.

The Assn. of State Foresters went on record that federal grants-in-aid for reforestation should be continued.

Among research areas declared neglected were insects and disease, watershed management, forest genetics, utilization of low-quality woods, and economic aspects of forest management. Lack of correlation in the over-all research program was mentioned and a recent survey indicates some individuals and institutions are spreading themselves thinly over a wide range of projects instead of concentrating on valuable fields. Need for research in forest genetics was emphasized again and again.

It was generally suggested that industries concentrate on applied research and provide more pilot-plant developments. Nevertheless it was pointed out about 88 per cent of current federal research expenditures are in applied research and, contrarily, a recent survey indicates a big increase in fundamental research instead of applied, particularly in the pulp and paper industry.

WANTED: Pulpwood Grinders with or without electric motors. When offering, give complete information and specifications including manufacturer's name and serial numbers. Write Box 164, PULP & PAPER, 370 Lexington Ave., New York 17, N. Y.

WANTED: Steel tanks, 7 to 10 foot diameter, minimum wall ¼ inch. Sectional tanks preferred. Also 3 to 4 foot diameter, minimum wall ¼ inch, 6 to 8 feet long. When offering, give complete specifications. Write Box 170, PULP & PAPER, 370 Lexington Ave., New York 17, New York.

WANTED: Manager for Paper Distributor in Far East. We have an opportunity for a capable paper man with some experience in handling finances. No foreign language necessary. Must be single. Preference will be given to person who has traveled or lived in Far East. Give full details of experience and personal history to Box 166, PULP & PAPER, 370 Lexington Ave., New York 17, New York

POSITIONS OPEN

We can place—managers, superintendents, asst. supts., and foremen in the following mills: roofing felt manufacturing; coating plants; Cylinder, Fourdrinier and Yankee machine mills; school supplies mfg.; packaging field, printing, bag making, etc.; kraft pulp mills, kraft liner board and tissue mills.

Also supt. finishing large mill; mech. and plant engineers, master mechanics, designers and draftsmen; chemists, chem. engineers, laboratory men, technical directors. Tour bosses, salesmen, demonstrators, machine tenders and back tenders. Sales representative for resin coated papers, bags, printing, etc. for Metropolitan area.

If you are available for a position in paper or pulp mfg. or paper converting, SEND US YOUR RESUME. It will be in confidence. No fee unless you accept employment through our Service.

CHARLES P. RAYMOND SERVICE, INC.
Phone: LIberty 2-6547
294 Washington St. Boston 8, Mass.

WANTED: Good, used stock pump, 3000 to 5000 gallon capacity at 70 to 80 foot head. When offering, give complete information and specifications. Write Box 169, PULP & PAPER, 370 Lexington Ave., New York 17, New York.

WANTED: EXPERIENCED PULP AND PAPER MILL DESIGN ENGINEER. Graduate. Location New England. Write C. A. Redden, Chief Engineer, Hollingsworth & Whitney Company, Waterville, Maine.



Count on Lifetime Engineering Service

WHEN YOU USE SWENSON PULP WASHERS

Here's a helpful service you can expect *and receive* when you use Swenson Pulp Washers in your plant. You *always* have the knowledge of our complete technical staff at your disposal . . . brought to you by a competent chemical engineer who can help you obtain the highest efficiency from your pulp washer system. Performance tests will provide a basis for his recommendations regarding chemical loss, dilution, and to solve operating problems. Look into the many advantages of Swenson Pulp Washers *now!* You are assured of continuous engineering service for the *lifetime* of the equipment.

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F&P now provides this new chlorinator which successfully uses the efficient, positive diaphragm regulator principle for handling dry or wet chlorine gas. Vacuum system avoids leaky water seals, is completely enclosed. Available with manual rate adjustment or accessory proportioning, program or remote control. Extremely versatile for paper mill bleaching, slime and algae control, industrial wastes, and stream pollution control. Write today for fully illustrated facts, including details on Fischer & Porter IRON-CLAD guarantee and free demonstration.

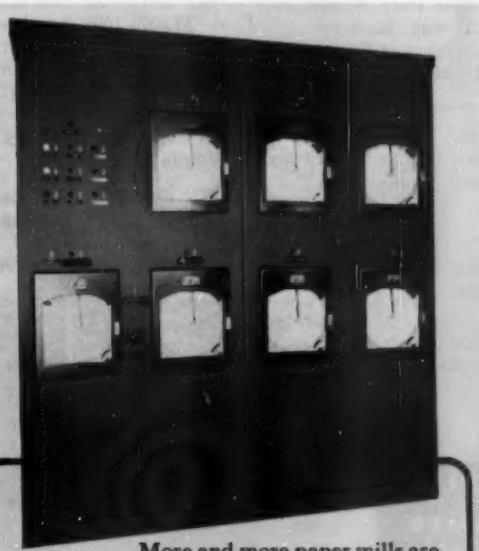
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More and more paper mills are achieving better paper production using F&P control systems. Let our specialists in paper mill instrumentation show you how to improve your mill operation.

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BLO-HOG

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Eats Up Everything!

Patents Pending

. . . including Pine, Oak, Gum, Hickory, Elm, Wet Veneer, Round-up and Sandy Bark. Conveyor-fed—no attendant required. Positively protected from major damage by tramp steel. All connections locked — nothing to shake loose. Maintenance costs unbelievably low.

". . . Dear Mr. Montgomery: It is an unbelievable machine and it is still hard to believe that it is actually handling the enormous volume of scrap we are feeding into it. We operate the hog without an attendant—which means a considerable saving.—J. B. Black, Plant Superintendent, Ocala Manufacturing, Ice and Packing Co., Ocala, Fla." C. I. T. Terms Available



Write for bulletin and details

JACKSONVILLE BLOW PIPE CO.

P. O. Box 3687, Jacksonville, Florida

Personals

MILTON J. MAGUIRE, Portland, Ore., representing mill suppliers in Pacific Coast states, Alaska, British Columbia and Hawaii, has added two new accounts—Curlator Corp., Rochester, N.Y. and Multi-Metal Wire Cloth Co., New York. The Curaltor stock preparation machines have not previously been represented in these areas but Multi-Metal's cut wire cloth was handled by Pacific Coast Supply Co., recently dissolved.

MORE CROWN ZELLERBACH personnel news from Coast: *O. F. KILHAM*, personnel and safety supervisor at Port Townsend, appointed to board of the local Kiwanis Club. FRANK TERRAL, formerly of Camas industrial engineering, transferred to St. Helens Pulp & Paper, Crown subsidiary, as industrial engineer. LYLE J. GROSS, senior research engineer in experimental pulping group of Central Research, Camas, has taken leave to join the navy. *EUGENE FROST*, chemical engineer returned from army service in Korea, joined the experimental pulping group of this department.

CHARLES YOUNG, technical assistant of coating plant and supercalender department, West Linn, Ore., has been promoted to assistant superintendent, Western Gummed and Coated Products Division, North Portland. *THOMAS W. HART*, formerly accountant at Camas, has become chief cost accountant, industrial accounting, St. Helens. *MICHAEL J. BRIGGS*, bag factory foreman at St. Helens, has retired after 24 years. *EARL T. WALKER*, chief steam plant engineer, West Linn, retired after more than 50 years, and *FREDERIC R. SIEVERS*, groundwood mill superintendent, Camas, retired with 48 years.



FORTY-TWO employees of CROWN Z'S LEBANON, ORE. Division received pin awards for 5 to 40 years service. Vice Pres. A. B. LAYTON, San Francisco (third from right), presented the pins and made the principal address, stressing significance of the organization's research and development work which has resulted in major changes in operations at this and other CZ plants.

High Award winners (L. to R.): JOHN SPIRES, Lead Millwright and Relief Department Supervisor, 25 years; Mrs. LAVELLE LOFTIN, Secretary to Res. Mgr. B. C. Smith, 25 years; DONALD PHELPS, Backtender, 25 years; LAYTON LOFTIN, Office Manager, 30 years; EDWARD MILLER, Backtender, 30 years; Mr. LAYTON; FRANK GODFREY, Machine Tender, 40 years; FRANK SMITH, Machine Tender, 35 years.

NORTHEAST

One Sold Wool, Now Sells Felts

HENRY BECKER is new assistant technical control director for Scott Paper Co. at Chester, Pa. He "joined" Scott in Everett, Wash.—when Scott acquired the Soundview Pulp Co. there, it got him. He had been with Puget Sound Pulp before serving in the army in the war. Most recently he was technical director at Scott's Anacortes, Wash., pulp division.

HENRY L. MELLEN of Hercules (for Connecticut Valley), H. K. CARTER of DuPont (for N.Y.-Canadian), *J. F. CRONIN* of Cheney-Bigelow (for Northeast) and *D. V. VIGNERON* of Tyler (for Penn.-N.J.-Del.), are new affiliates representatives for their respective Supts. Divisions.

JOE KELLNER, of Needham, Mass., who used to sell wool to felt makers, is now selling felts to pulp and paper mills in New England and New Jersey for H. Waterbury & Sons Co., Oriskany, N.Y.

A PULP & PAPER representative met Joe making the rounds with *CHARLES KELLEY JR.*, who is transferring to Midwest.

F. A. STROVINK has been named Eastern regional manager for Paper Chemicals Department of American Cyanamid Co. to succeed *A. C. BATE*, retired. Mr. Strovink has been PCD since 1940. Mr. Bate's retirement follows 24 years with Cyanamid.

LOUIS CALDER, JR. has been elected executive vice president of Perkins-Goodwin Co., and *EDWARD MCSWEENEY*, vice president and treasurer.



TAKE NEW POSTS IN NOPCO

ROBERT F. McCLELLAN (left) appointed Vice Pres. and Gen. Mgr. of Yocum Faust Ltd., London, Ont., new subsidiary of Nopco Chemical Co., which produces industrial chemicals for Canada.

RICHARD F. SPAIN (right) former assistant to Mr. McClellan and his successor as new Midwest District Mgr. for Nopco, with headquarters at 3625 So. Jasper Place, Chicago.

Mr. McClellan was born in St. Louis, graduated from St. Louis University and has been with Nopco 27 years, as Midwest Mgr. since 1942. He will direct expansion of the Ontario operations which were bought last Nov. 2.

Mr. Spain was born in Orange, N. J., graduated from New York U. in 1941, when he joined Nopco, working in the laboratories in Harrison, N. J.

Designed to Trim your Trimming Costs!



Designed to Cut Trimming Costs

The S & W Model E Undercut Trimmer meets the needs of the modern finishing department for high production, accuracy and safe operation. For years the Standard Undercut Trimmer and the Model E have been giving outstanding service in the leading plants of the country.

Now, we offer the Model E with side loading table and air for floating pile, for fast, straight line operation, ease of handling stock and increased efficiency. The Model E is built in 56", 66", 76" and 86" widths.

WRITE FOR BULLETIN!

The SMITH & WINCHESTER Manufacturing Company
SOUTH WINDHAM, CONN.

CHARLES H. GUISCHARD, graduate of *Hofstra College*, has been appointed pulp and paper industry representative for J. O. Ross Engineering in Pennsylvania, working out of New York.

ARNOLD B. HUYSSOON has been named senior vice president and general manager of sales and manufacturing of the paperboard division of Continental Paper, Ridgefield Park, N.J. With Continental 33 years, he was Paperboard Division director for WPB during the war.

CHARLES G. PAINE, vice president and general manager of Eastern Corp., Bangor, Me., died in Boston, Nov. 22, following a brief illness. At time of death he was also president of Lincoln Pulpwood Co., Ltd. His son, *LEWIS PAINE*, is associated with Eastern's operations at Lincoln, Me.

ALBERT WAGNER, formerly sales engineer for Hygrotester, Inc., has joined the staff of Newton Falls Paper Mills, Inc., as instrument engineer. Mr. Wagner came from Germany a few months ago.

F. Q. WILSON has been appointed New York district manager of the Elliott Co., offices at 271 Church St. He is a native of San Jose, Calif., and joined Elliott in 1938.

CLIFF PLEIFFER has joined the technical staff of Lowe Paper Co. He formerly was with Geigy Chemical Corp.

RAYMOND F. CUYLE has been named technical director for Hollingsworth & Whitney Co. He has been with H & W since 1939, and will be at the mill at Winslow, Me.

THOMAS I. MEEHAN, graduate of Clarkson, is new resident manager of Carthage, N.Y. mill of Crown Z. At Carthage since 1948, he spent four months recently at Camas, Wash., as machines-beaters maintenance supervisor.

Hanchett Announces New
Slitter Knife Grinder

Hanchett Mfg. Co., Big Rapids, Mich., announces a new grinder for top and bottom slitter knives, which it describes as incorporating features never before offered for this operation

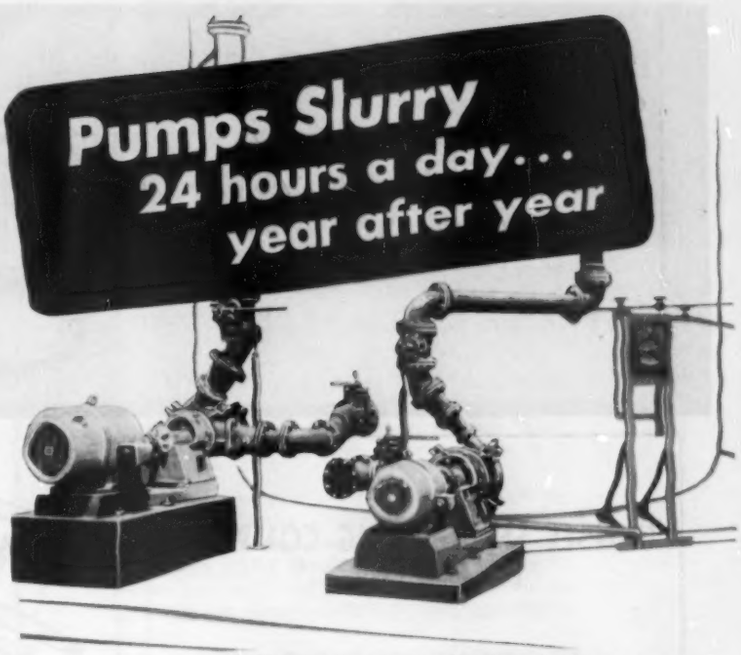
The machine will have capacities for the grinding of both top and bottom slitter knives, ranging from 3 in. through 24 in. in diameter, with any widths or thicknesses required.

The machine features automatic slitter knife holding mechanism as well as automatic oscillation of the grinding wheel head member, to assure extreme accuracies both for concentricity as well as micro-inch finishes of knives.

ON FIRST TRIP SOUTH FOR HIS FIRM



WILLARD F. SCHROEDER, on first trip to Southern paper mills for his company, *National Distillers Chemical Corp.*, reading PULP & PAPER. His company offers bleaching chemicals.



● MORRIS TYPE R SLURRY PUMP at the left is on continuous 24-hr. duty delivering 1000 GPM of a 170° lime slurry at 100' head. Fifty-HP motor operates at 1180 RPM. Intermittent-duty pump at right delivers 200 GPM at 50' head with 7½-HP motor turning at 880 RPM.

In slurry-handling operations, "long-term service" is a meaningless claim unless the pump will work day-in and day-out with a minimum of maintenance time, trouble and expense

Morris Type R Slurry Pumps—with an established reputation for longer life—also incorporate in their design exclusive features which result in easier installation . . . fewer interruptions to service...less overhaul...fewer replacements.

To provide uninterrupted service . . .

The gland is under suction pressure only. This reduces leakage and dilution . . . keeps harsh abrasives out of the stuffing box . . . practically eliminates packing troubles.

There are no internal studs or bolts. Caustic and corrosive solutions cannot seep past threads and cause maintenance headaches.

To make installation and dismantling easy . . .

Shell is interchangeable for right or left hand rotation. Suction and discharge nozzles can be rotated around the axis of the pump to a total of 72 different locations.

Impeller removed without disturbing the piping. You simply loosen 4 *outside* clamping bolts and pull off the end cover. This feature alone saves considerable time and labor.

● *Free Service.* Morris Engineers will be glad to recommend the pump best suited to your needs for size, capacity, etc. *Send necessary data today . . . include request for Bulletin 181.*

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Specialists in Hydraulic Barking
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MAKE GOOD PAPER

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GEIGY TECHNICAL SERVICE ON COLOR
PROBLEMS HAS BEEN OUTSTANDING
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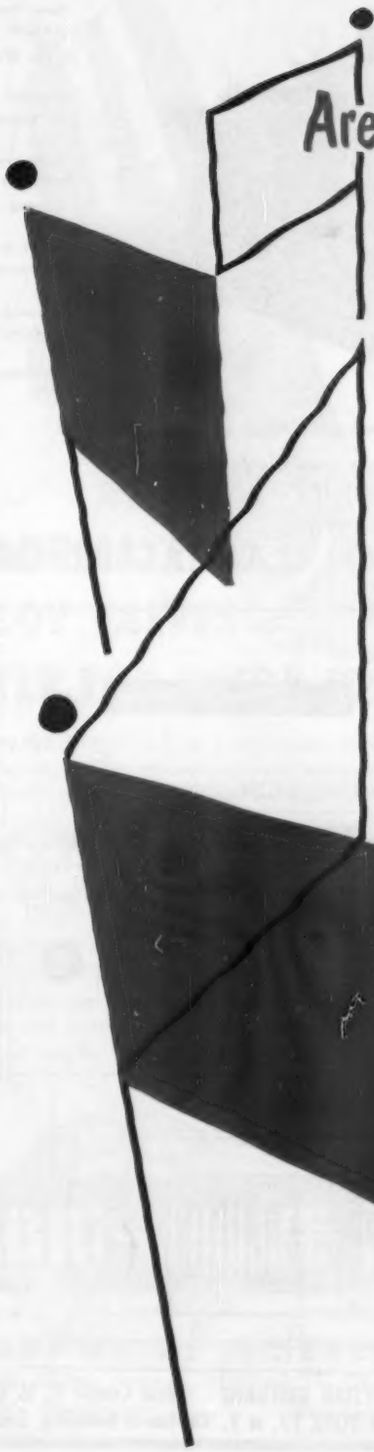
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REPRESENTING:
RICE BARTON CORP. — HEPPENSTALL CO.
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AUTOMATIC VALVE CONTROLS
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SUTHERLAND REFINER CORP.
PULP REFINING SYSTEMS
501 PARK BUILDING, PORTLAND 5, ORE.
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EXCELSIOR Woolen Co. KNOX Camden Me. FELTS & JACKETS

"EXCELSIOR" FELTS
The Trademark of Felts of Superior Quality
for Every Grade of Pulp and Paper
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CAMDEN, MAINE
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DAN E. CHARLES AGENCY, 1331 Third Avenue, Seattle, Wash.



Are recession signals up?

Is the boom fading? If so, won't business gravitate more than ever to the most attractive bid?

Are you equipped to thrive on a slower, more sane, business plane? Your paper machine. Is it efficient?

In particular—your dryer section. Is it right up to snuff or is it a production bottleneck? If a bottle*neck, proper condensate removal will stop that.*

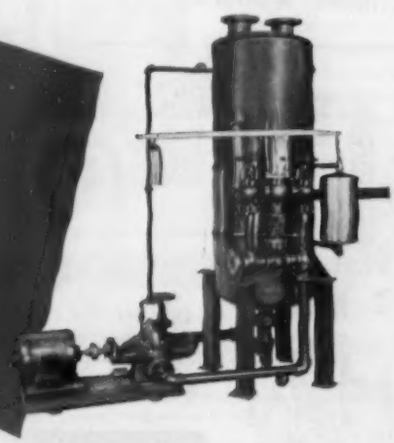
Are you drying evenly clear across the sheet? *Would you avoid tendencies to shrink, cockle or* curl? You can, if you provide for proper condensate *removal.*

Are you using too much steam on the dryer—wasting dollars that could be saved? Effective condensate removal will also plug that leak.

Fulton Dryer Drainage corrects all these troubles. Fulton Dryer Drainage is standard equipment with all paper machine builders—is going onto all the new machines, as a matter of course.

And as fast as we can supply F D D systems, they *are going onto the older machines as well. Already* over 800 F D D systems in use.

If you operate a smaller or an older machine, get a F D D estimate at once. There is no point in *handicapping yourself with an inefficient dryer.*



THE MIDWEST • FULTON MACHINE CO.
DAYTON, OHIO

HERMANN *Improved* CLAFLIN

"Continuous Beater & Refiner"

"Continuous" Beating-Refining Kraft Pulps for Multiwall Bag, Gumming & Kraft Specialties.

Waxing Tissues

Glassine & Grease-Proof Grades

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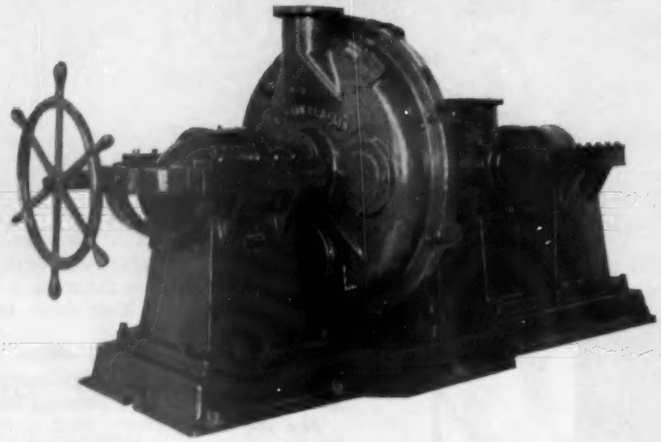
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Deinked Stock

Filler Stock

Liner Stock

"Cycling"



"Hot Brown Stock" Blow Tank to CLAFLIN direct to the Washers

"Asplund Fibre" .009 Corrugating

"Chemipulper" "Defibrator Stock" Roofing Felt

"Neutral Sulphite" .009 Corrugating

"Knotter-Screen Rejects"

Straw-Bagasse

Four Size Units Including No. 0 For Laboratory-Test Purposes.

NOW AVAILABLE: NEW NO. 3 HEAVY DUTY UNIT WITH TANGENT HEAD FOR DEFIBERING HOT BROWN STOCK. REQUIRES LESS THAN 1-H.P. PER TON.

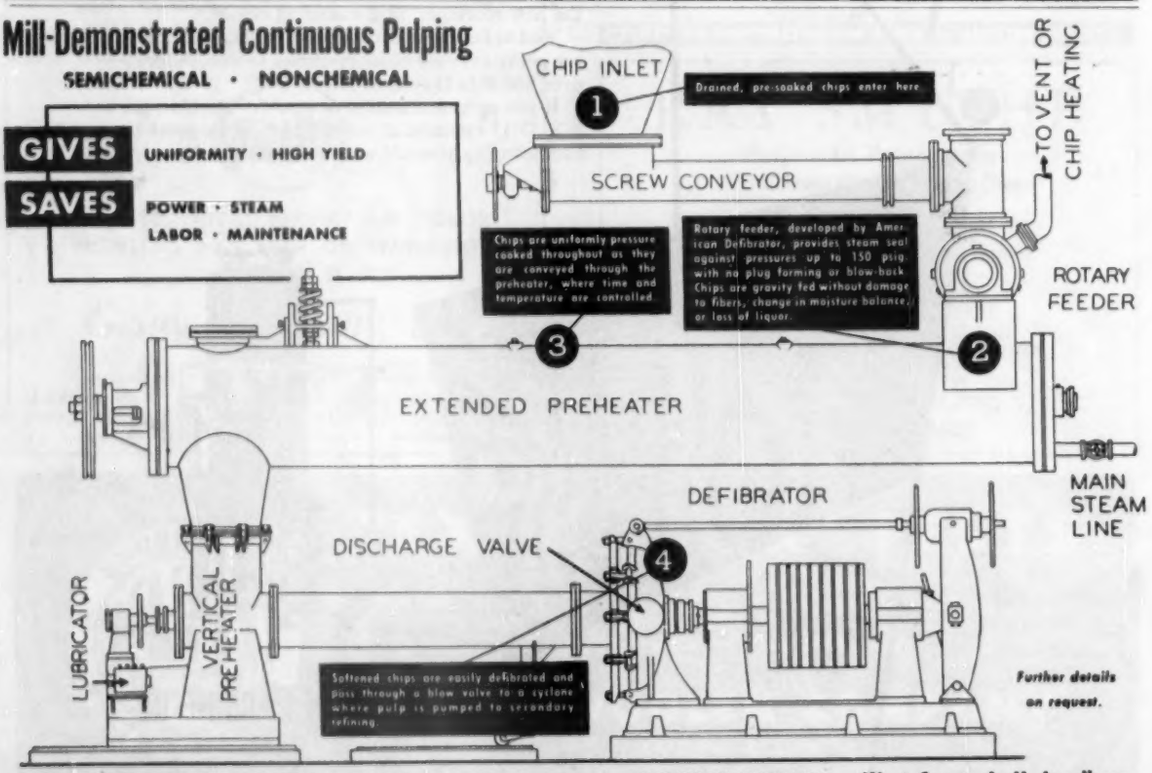
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Mill-Demonstrated Continuous Pulping

SEMICHEMICAL • NONCHEMICAL

GIVES UNIFORMITY • HIGH YIELD

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Further details on request.

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FABRICATED ALLOY VALVES BETTER FOR EVERY JOB

Maintenance is reduced to a minimum with Fabri-Valves. Whether your problem is liquid, vapor, steam or gases you'll find a Fabri-Valve to meet your specific need. Fabri-Valves are made of stainless steel, monel or any combination; alloy plate is rolled to a complete weldment, thus eliminating porous areas and assuring exact thickness. These light-wall valves are fabricated to give complete internal and external protection wherever required.

Fabri-Valves cost less, weigh less, are cheaper to ship and install. 2″ to 24″ Fabri-Valves carried in stock. Custom made orders filled in 30 days.

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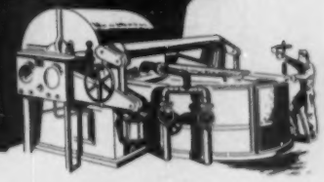
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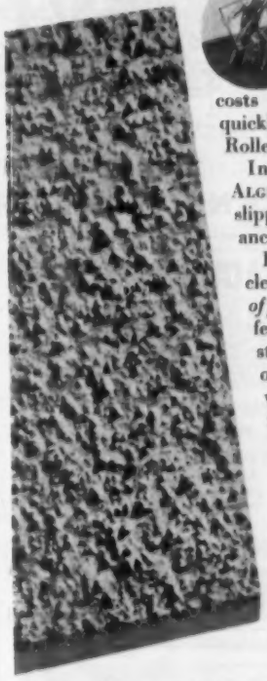
SOUTHERN CORPORATION ..... Charleston, S.C.
FELKER BROS. ..... Marshfield, Wis.

MILLIONS OF DOLLARS LOSS IN PAPER PLANTS EACH YEAR CAUSED BY SLIPPING ACCIDENTS



SLASH COMPENSATION INSURANCE PREMIUMS with

ALGRIP





Crippling accidents on wet, slippery floors in paper plants that cut production and drive insurance costs up can be stopped easily and quickly by laying ALGRIP Abrasive Rolled Steel Floor Plate.

In countless plants, installing ALGRIP in danger areas has halted slipping accidents and pared insurance premiums down to pocket size.

Hundreds of tiny abrasive particles impregnated *to a controlled depth of penetration*—an exclusive ALGRIP feature—into tough, lightweight steel plate gives every square foot of ALGRIP an abrasive "grinding-wheel" grain surface that takes a firm grip at every footstep. And ALGRIP's surface never becomes smooth because wear only exposes new particles.

ALGRIP foot safety pays for itself in savings of insurance premiums. Write today for full details on how ALGRIP can cut costs for you. There's no obligation.

A.W. ALGRIP Abrasive Rolled Steel Floor Plate

ALAN WOOD STEEL COMPANY

CONSHOHOCKEN, PA.

Please send Booklet AL-38 on cutting costs with ALGRIP.

Name _____ Title _____

Address _____

City _____ Zone _____ State _____

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When paper was made by hand—in small deckles, the way the Chinese made it—papermaking was a slow process. To shake the deckle fast enough resulted in waste of furnish that slopped over and fell onto the floor. With modern machines, haste does not mean waste, if the machine is equipped with the proper Hamilton felts.

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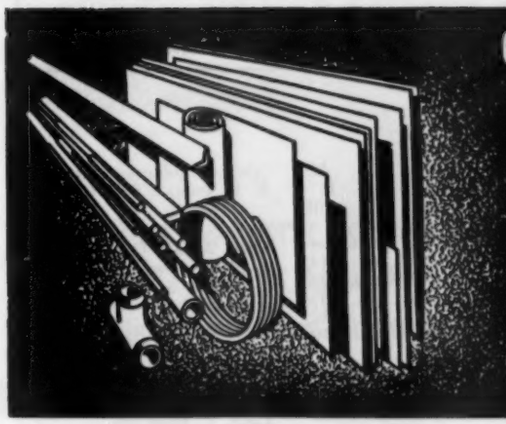
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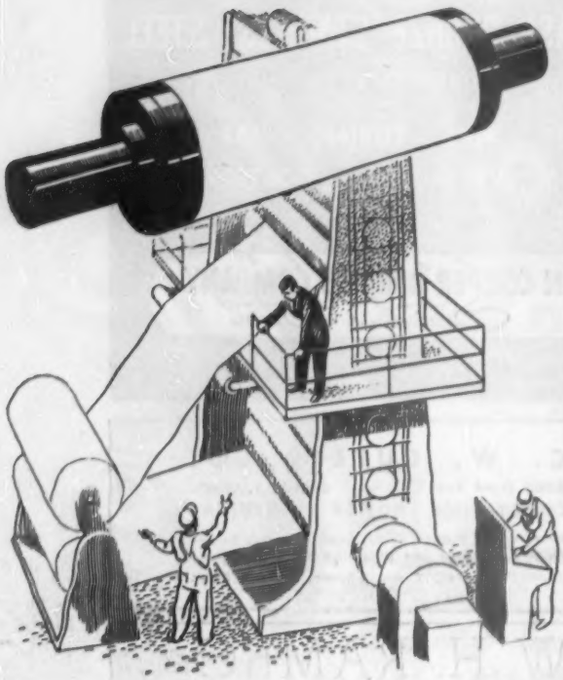
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